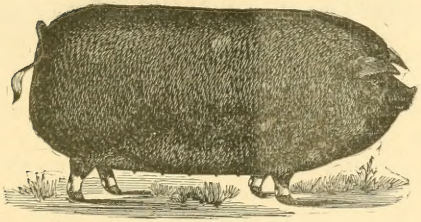
THE

HOG IN AMERICA,

—PAST AND PRESENT,—

—WITH—

SUGGESTIONS UPON FARM, PENS, BREEDS, BREEDING, PEDIGREEING, STANDARD OF EXCELLENCE, SELECTION OF ANIMALS, MANAGEMENT OF SWINE, SELLING AND OTHER SUBJECTS OF IMPORTANCE TO SWINE BREEDERS,



—BY—

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—OF—

SHEPARD & ALEXANDER'

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PREFACE.

Custom rather than necessity requires a preface by an author when a book is presented to the public. Not wishing to break this innocent and harmless custom, the author says, that this work was *not* written at the request of "many friends," nor for the purpose of filling any long-felt want, nor yet as a careful and elaborate literary production; on the contrary, the writer thought he had something to say that might be of benefit to the public, and concluded to say it, in a plain, practical way. It is not a work made up of newspaper clippings, but has been carefully prepared as to matters of history from all sources within reach and the facts, as near as possible, arrived at by comparison of the different and partial statements of individuals, and harmonizing the different views, as nearly as possible, by taking into consideration all the circumstances of the several early writers, their prejudices and interest in the subject matter of their articles. When various opinions and conclusions of different persons are grouped together, often causing a conflict, the reader is bewildered and derives little benefit. The author has, therefore, in all cases given his own judgment and experience, and let it pass for its true value, which an intelligent and discriminating public will unerringly fix. That there will be found many errors and imperfections, is very probable, and any fair and honest criticism will not offend, but will, on the contrary, be a source of future profit. That the author is partial to the Poland-China breed of swine is plainly avowed and manifest, and if such preference, or if it seems to the reader prejudice, has caused the writer to unjustly criticize other breeds, it is not the result of a design so to do, but rather the imperfection common to most men, viz.: the difficulty of "seeing ourselves as others see us," but this can only apply to the chapters relating to history of breeds and the introduction of hogs. The other chapters, if of benefit to any, are to all. This book is not designed to give any history of the hog, except in America, save such as may be necessary to properly describe those that now, or have heretofore, existed on this continent. In the preparation of this work, the author is indebted to the following, among many other sources, for information, viz.: Early Colonial History, Memoirs

of the Philadelphia Agricultural Society, Encyclopedias, Youatt and Martin on the Hog, *American Farmer* (O. S.), *Ploughboy*, New York *Farmer*, *Genessee Farmer*, Albany *Cultivator*, *Western Farmer and Gardener*, *Farmers' Cabinet*, *Franklin Farmer*, *American Agriculrist*, *Ohio Cultivator*, New York State Agricultural Reports, Indiana State Agricultural Reports, *National Live Stock Journal*, *Breeders' Gazette*, and *Swine Breeders' Journal*. The illustrations are many of them drawn by the author and are necessarily crude, because the author is not an artist nor the son of an artist. It is, however, the belief of the author that the illustrations will be of considerable aid to the readers of this work, and this is especially true of those used in illustrating the standard. That the work has many new features in its class will not be denied—whether they are useful and valuable, is submitted to a generous public.

S. M. S.

INDIANAPOLIS, IND., December 16, 1886.

THE HOG IN AMERICA.

INTRODUCTION.

This introductory chapter is designed only as an outline and chronological history of swine in the United States, and therefore, although most of the breeds are mentioned in their order, there is no attempt at describing their peculiarities. That work will be left for a later chapter, where may be found all in relation to the several breeds thought to be of interest, which now, or may have had a habitation and name in America.

The hog is not a native of America, but it followed very closely upon the footsteps of the white man, and its easy adaptation to our climate, and marvelous multiplication, are among the many evidences of its importance as a factor of the wealth and prosperity of the land of its adoption.

The early history of the introduction of swine into the New World is very meagre, and we shall have to content ourselves with generalities and much uncertainty. The general course and progress of the hog here is quite plain, but the cross-roads and bypaths which from time to time, exerted more or less influence, are now scarcely distinct enough to afford us much aid, except as matters of curiosity.

History informs us that the first swine which came to the New World were with Columbus upon his second voyage. They were loaded in Spain and landed in Cuba, in 1493. The next mentioned were brought into what is now Florida in 1538. In 1553, the Portugese took swine to Nova Scotia and Newfoundland. All these importations were doubtless of Spanish origin, but we are left to conjecture their number, form and color. In 1604 the French took swine into Canada. In 1608 the London Company took from England to the Jamestown colony in Virginia *about* six hundred head of swine. This is the first instance where even an approximation of numbers is given, but we have no further information as to the character of the importation. In 1624 swine were taken to the colony of Massachusetts Bay, but whether they were

brought from England or Virginia we are not informed. In 1625, the Dutch West India Company imported swine from Holland into what is now New York and New Jersey. Later, about 1637, a colony from Sweden settled in what is now Delaware, bringing with them the *Horse-hoofed* swine of their native land. Here is the first peculiarity mentioned of the imports of swine, and that is all that is said.

From time to time, as the various colonies were settled and emigrants came to our shores, we are informed in a general matter of course sort of a way that they brought with them the domestic animals of their native lands. There are several reasons why the information now sought was then considered unimportant, and among others we suggest the following: Many of the early settlers were adventurers, they came expecting to find the precious metals in abundance, and they supplied themselves with necessaries to aid them in accomplishing the end contemplated. They little dreamed of the grand results that have followed; on the contrary their minds were occupied with the then present, and we find about as much particularity given of their outfit as would now be given in describing an expedition to the North Pole, or as can be found of the early expeditions to California. In none of them can be found any account of the breeds of animals taken, because they were taken as a means of sustenance, not for culture. Secondly, at that early period improvement in domestic animals in the mother countries was in its infancy, and was exciting but little if any attention; and the hog least of all. So that with them a hog was simply a hog—"only that and nothing more." The secondary influx of Pilgrims was more laudable, for they were seeking homes for themselves and posterity as a means or end to freedom of opinion. This was their guiding star and occupied their thoughts, and of this they made record. Every other matter was secondary or trivial; and what they should eat and wear only thought of as necessities. And still another reason why hogs received so little mention or thought, was that when they were brought their subsistence was of necessity largely upon spontaneous productions, such as nuts, roots, herbs, etc. This meant almost unlimited freedom for the hog and put it upon its own resources for a livelihood. Improvement, even if desired, could not be thought of when the control was largely lost. As before intimated, the mind of the settler was occupied with something as he supposed, and really was, of more importance. They were learning to govern themselves and to provide present sustenance.

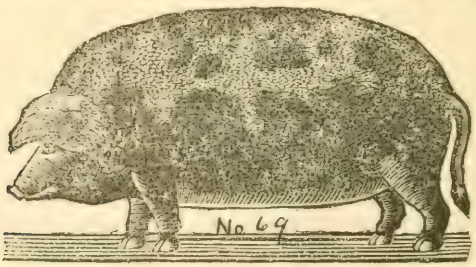
But the pilgrim was human, and like all the rest of the human family he would relate troubles, hence when the swine had multiplied so rapidly as to become a source of trouble, we find the records showing that in a few years, notably about 1630, the inhabitants of Jamestown were compelled to palisade the town to keep out the hogs. Other colonies, such as Massachusetts Bay, prohibited corn from being fed to swine,

unless obtained from some other colony. In 1635, a law was enacted, requiring pigs farrowed between July and January, to be killed at one month old, and swine were required to be kept up, herded, or placed upon islands; all others were deemed wild hogs, and any person was authorized to take them *dead or alive.* Still later that ordinance was so modified as not to apply to hogs that were "*rung,*" by having their noses cut so as to prevent their rooting. Later, another condition was imposed upon all hogs to entitle them to the freedom of the country. They were required to wear "*pokes.*" A pig poke is a forked limb put stride the neck of the hog, forked ends down, and the two ends secured by a *withe* or *leather whang* under the throat of the pig, and the ends projected up and down from the neck, say four or five inches. This devise was not put upon piggy because the pilgrim was proud, but to keep him out of the truck patches. To the thoughtful mind this ornament suggests much as to the form of the swine of that day. It indicates that where the head could go the body might easily follow, or in other words, the head was the *big thing* in piggy's anatomy. Imagine the improved hog of to-day wearing pokes, to keep its body from following its head through a crack. We are unable to give much information as to the early swine for several years, except that it multiplied rapidly and subsisted on nuts, herbs, grubs, etc. In other words, they were bummers, and subsisted off of the country.

Just as the settlements were beginning to grow, prosper, and the settlers to give some thought to crops and domestic animals, the war of the Revolution broke in upon them, and all was confusion and desolation. Peace being restored, it took several years to catch up to the point where the war had found them, and then realizing that they had a *home* and a *country*, the new citizens being largely an agricultural people, began to look about for improvement. The horse, cow and sheep received attention first, and then the hog. Corn was becoming their great staple and it must be profitably consumed. Public conveyance was limited, and some, and that too, the best means must be devised to carry the surplus product to market. The heretofore despised and neglected hog afforded the best means of concentration and transportation; he could be fed and driven to market. Baltimore and Philadelphia were then the principal *packing places,* so the surplus hog must be driven to one or the other of these points. The first efforts for improvement were for large, good traveling hogs. This, however, was found to be rather a tedious medium, as the large, coarse hogs were from three to four years in maturing. So that about 1800, the people were ripe for a change; they wanted a hog that would get there quicker. In 1800 or 1801, the Duke of Bedford, an English nobleman, and yet a friend of General Washington, sent by an Englishman, named Parkinson, a pair or trio of pigs as a present. Parkinson took the pigs to America, and upon arrival, concluding that he could manage the distribution better than

the General, kept the pigs and placed them upon his farm near Baltimore. These pigs proved to be good feeding, easily maturing, good sized hogs. Their fame spread rapidly and Parkinson could not supply the demand. The manner in which Parkinson had obtained, and retained the hogs, prevented him (if he knew their breed) from giving the public their name or origin. At all events, they became widely and favorably known in that portion of the country as the *Parkinson breed*, and later, when their history was discovered, they were called *Bedfords* in honor of the Duke. Almost at the same time, at least not later than 1805, a number of the "*Heathen Chinee*" family of swine of various colors, viz.: white, black, blue and gray, from time to time, were introduced into various parts of the country, and notably, in Virginia, New York, Maryland, Pennsylvania and Massachusetts. These two breeds, the Parkinson and China, as they were called, produced a marked improvement upon, and were extensively used, to cross upon the common stock and upon each other. Shortly following the introduction of the two breeds above mentioned, we read much of a breed called the *Grass breed*. It seems to have commended itself to the people, as we hear of it in Virginia, Maryland, Pennsylvania, New York and Massachusetts, soon thereafter. Its origin is a mystery, not now solvable. Some writers have attempted it but no two agree. If conjectures were in order, we would suggest that it was a cross of China upon common stock of the country. These three breeds formed the "base of supply" for a quite general advance along the whole line. Later, about 1812, an other and powerful Richmond appeared upon the field, and his name was Byfield.

In 1819, the first agricultural paper was started in the United States, and was called the *American Farmer*, and published at Baltimore, Md. In 1821, we find in the *Ploughboy*, the second agricultural paper, the first cut or illustration of a hog. We have reproduced it by the photo-engraving process, and can, therefore, give our readers an exact copy, although reduced in size; also the description as then given:

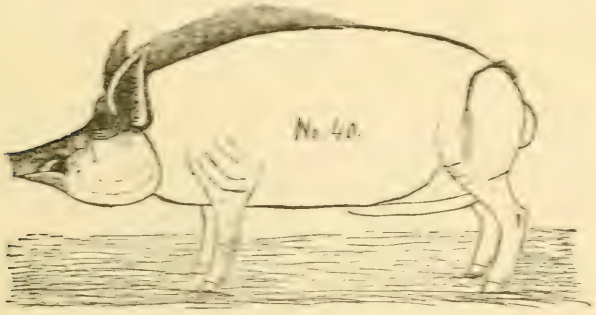


"MAMMOTH HOGS.—There are now exhibiting in this city, at Win-
" ant's Yard, No. 12, Beaver-street, two Great Natural Curiosities, viz.:
"*A Sow and Pig, weighing 2,033 lbs.*"

"The Sow is one half of the grass breed, and the other half Welch. - "She measures nine feet nine inches in length, seven feet three inches "round the body, and weighs 1,107 lbs.—her age was two years and two "months the 8th ult. Her Pig was one year and two months old the "1st inst. and is every way shaped and coloured as the mother, except "the legs are some larger. He is very elegantly built, and his weight "is 940 pounds. It is believed by the best judges, should he live to be "as old as the Sow, he will weigh at least 1,500 pounds. These two "Hogs were raised in the town of Nassau, county of Rensselaer, by "Robert Brown, who is an accomplished farmer."

[This is the first and only mention of the "Welch breed," or any of - its crosses, that we have been able to find.]

The cut not only illustrates the hog, but the state of the art of wood engraving of that day. Up to 1832, these three, viz.: the Parkinson (Delford), China and Byfield, were, beyond all question in the advance, although assisted more or less by the Spanish Black, Africus, Neapolitan, English White Suffolk, Angus and Ilishy, Black Hampshire, Leiceisters, Short-legged, and other breeds.



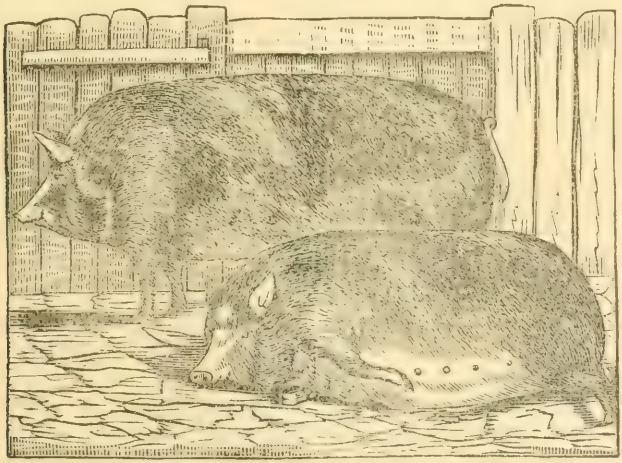
THE PILGRIM HOG.

A peculiar feature of those early days of improvement, and for many years after, is that none of these breeds were to any extent kept pure. As a rule they were crossed upon the common stock and upon each other, the grades often retaining the names of the pure breeds, while the crosses of pure breeds were given a combination of the two names, or taking the name of the breeder or locality. In short, the American farmers, at least the progressive ones, were consequently trying to make new combinations, using the introduced breeds only as factors. The people of America themselves, as a people, were, and still are, of a mixed origin. The different nationalities had, by intermingling become merged into a new, vigorous and enterprising people. They had conquered in war and had faith in their prowess in the paths of peace. The

hog sent to them from the Old World may have been satisfactory to that people from whence the hog came, but here circumstances were changed and an Americanized hog was the thing sought and needed, and it was this spirit that led to continual crossing. The old woods hog was still largely in the majority, and was the main reliance, because he could fatten in the woods. From descriptions we have drawn a sketch of him, and he might reasonably be styled the early pilgrim:

The few agricultural papers then existing stimulated enterprise and aided much in the diffusion of knowledge; the people were moving westward; agricultural fairs, county and State, began to be organized; the farmer was making himself felt and heard, and the long distances to packing markets required a hog adapted to the new order of things. This was the state of the country and its feeling when the year 1830 rolled around. A new era was about to be and was inaugurated. The period from 1830 to 1840 proved to be one of the most important decades in the history of swine-breeding in America. Importations were frequent, and the old elements were brushed up for the contest. In 1832 the first Berkshires as such were imported into the United States. Up to that time the vantage ground of improvement was held by the Bedford, China, Byfield and Grass breeds, but the new candidate for public favor was comely and backed by men of intelligence and nerve. They resorted to new methods, among which was a free use of printer's ink. Under the old methods, advertising through the agricultural press had not been thought of. The Berkshire men pressed the fight and claimed for their favorite every excellence, and wanted the earth, and the fullness thereof. Before the friends of the old stand-bys had awakened from their fancied security, the Berkshire had a boom unprecedented and theretofore unapproached. They were taking the country like wildfire. Several importations of white, spotted and nearly black Berkshires followed. The friends of the old breeds were taken by surprise. The old breeds, which had so long been at the front, were, by reason of continued crossing, in bad condition to meet the new antagonist; but the very agressiveness of the friends of the Berkshire infused new life into the friends of the Byfields and the Bedfords and they adopted the tactics of the new comer. Advertising was the order of the day. The agricultural paper became an important medium, and it, too, felt the boom, for a number of new ones soon entered the field, and all were liberally patronized. The new candidate was fast distancing all competitors, and the great west soon became the battlefield of the breeds. The Mackays did not succeed in passing the Alleghanies. Only the Bedford and Byfield from the East reached the place of contest. The opponents of the Berkshire, feeling the battle a hopeless one unless reinforcements could be obtained, began to look about for succor. The improved China was brought in to enrich and quicken the blood of the Byfield and Bedford, and a new contestant from the then, far West,

Illinois, called the *Irish Grazier*, came forward. It had come from Ireland in 1834 or 1835, and secured a footing, and now, in 1836, entered Kentucky and the fight. The *Russia*, another new, unknown and unheralded breed, seemed to rise out of the ground in Ohio and Kentucky; from whence it came, when, and how, is now unknown; also the Swiss-Poland breed. All seemed to make common cause against the Berkshire, and then commenced the various combinations of blood of all the contending races, and the determination to have an *American breed* that should combine the excellences of all and as few of their defects as possible. It was anything to beat the Berkshire. The Irish Grazier may fairly claim the honor of checking the progress of the Berkshire. During the contest advertising became common and has never been abandoned by progressive breeders. Wood cuts, illustrating the hog, began to appear in 1838, and some of them quite large, occupying a whole page of the papers. We hereafter present to our readers photo-engraved copies of some of them. It was during this period of excitement and contest that a feeding contest was planned and carried out between a part of the combination, viz.: a cross of White Berkshire boar upon a Bedford or Woburn sow and the Black Berkshire. We here give an illustration of the winners, and an account of the contest from the pen of a friend of the Berkshire:



BANTER PIGS.

"They were selected to be fed by Dr. Martin, against a pair of improved Berkshires, in the hands of Mr. Fanning, editor of the *Tennessee Agriculturist*, and beat the Berkshires a long way. They weighed.

Bernice, (the one standing up,) 354 lbs., and Bertha, 348 lbs. Their form is almost perfect; handling very fine, and are altogether a beautiful pair. They had as much of the best of every kind of food as they could eat, and the most scientific management. Their weights, on the authority of responsible and honorable men, have been equalled, if not surpassed, at the same age, by Berkshires, with ordinary good keep. We do not state it, however, on our own knowledge, though we fully believe it."

It will be noticed that the writer of the above account dies hard. The result was a terrible and humiliating defeat of the Berkshire. During those eventful years, the opposition to the Berkshire was strengthened by what was then known as the "Big China," the "Spotted China," the "Poland," introduced into Ohio by a Quaker, also an importation of 1840, and the Warren County Hog.

It was a pretty fight, and finally resulted in a combination of all the breeds into a new one, now known as the Poland-China, the old ones rapidly being absorbed by the new combination, save and except the Berkhires, which though greatly disfigured and out of wind, struggled fitfully to maintain respectability. During this contest a few other breeds arose and fell, such as the Mocha, Norfolk, Thin Rind, Barnitz, Hospital breed and others. Others made a start, which they have maintained with more or less credit, such as Suffolks, Essex, Chester White, Cheshires, Yorkshires and others. The Berkshire, from the pinnacle of fame and glory in 1838, dropped by 1845, to a depth below its real merits. Thus do people often in excitement or depression become blind to actual merit. The hog demanded in 1830 to 1850 was one that would produce the most pork in the shortest time, upon the least feed, and still be able to walk to market. Railroads were not then, as now, everywhere, to haul the hog; it must walk. That was one of the tests. Corn was to be marketed; hauling was out of the question; it must be made flesh, and such flesh as could walk to market. The Berkshire when put to a practical test was not up to the requirements. He could not keep up with the procession, and his former friends deserted him in great numbers. He had been praised and boomed up so far beyond his actual merits, that in the disgust that followed, his merits were lost sight of.

Here let us disgress a little. Up to 1840 the census reports had taken no account of anything, save population, white and colored, and other matters were left out; but in 1840, the census reports first give us the number of domestic animals, and amount of agricultural products, by States and counties. Prior to that time, we of this age and generation, have little knowledge of how the West and South were crowding the older Eastern States in production; and you imagine our surprise when we looked in the census of 1840 for the relative standing of the States in the production of corn and hogs, and doubtless the reader will be as much surprised and interested, in looking into the figures a little.

In 1840 the six States of the Union showing the largest number of hogs, and their relative positions, are as follows:

1.	Tennessee,	2,926,607
2.	Kentucky,	2,340,533
3.	Ohio,	2,099,746
4.	Virginia,	1,992,155
5.	New York,	1,900,065
6.	North Carolina,	1,649,716

By the same census the six States raising the most corn, and their relative positions, are as follows:

		Bushels.
1.	Tennessee,	44,986,188
2	Kentucky,	39,847,120
3.	Virginia,	31,577,591
4.	Ohio,	33,668,144
5.	Indiana,	28,155,887
6.	North Carolina,	23,893,763

And while upon the question of census reports, we will follow the figures up to the present time, and the reader will notice how the positions of the States change each ten years, and that the older States drop out and the new ones appear:

Census of 1850.

	HOGS.		CORN.	Bushels.
1.	Tennessee,	3,104,800	Ohio,	59,078,395
2.	Kentucky,	2,891,163	Kentucky,	58,672,591
3.	Indiana,	2,263,776	Illinois,	57,646,984
4.	Georgia,	2,168,617	Indiana,	52,964,363
5.	Ohio,	1,961,170	Tennessee,	52,276,223
6.	Alabama,	1,994,540	Missouri,	36,214,539

1860.

	HOGS.		CORN.	Bushels.
1.	Indiana,	3,099,110	Illinois,	115,174,777
2.	Illinois,	2,502,308	Ohio,	73,534,190
3.	Missouri,	2,354 425	Missouri,	72,892,157
4.	Tennessee,	2,347,321	Indiana,	71,188,919
5.	Kentucky,	2,330,595	Kentucky,	64,043,633
6.	Ohio,	2,256,653	Tennessee,	52,089,926

1870.

	HOGS.		CORN.	Bushels.
1.	Illinois,	2,703,343	Illinois,	129,921,395
2.	Missouri,	2,306,430	Iowa,	68,935,065
3.	Indiana,	1,872,230	Ohio,	67,501,144
4.	Kentucky,	1,838,227	Missouri,	66,034,075
5.	Tennessee,	1,828,690	Indiana,	51,094,538
6.	Ohio,	1,728,968	Kentucky,	50,091,006

1880.

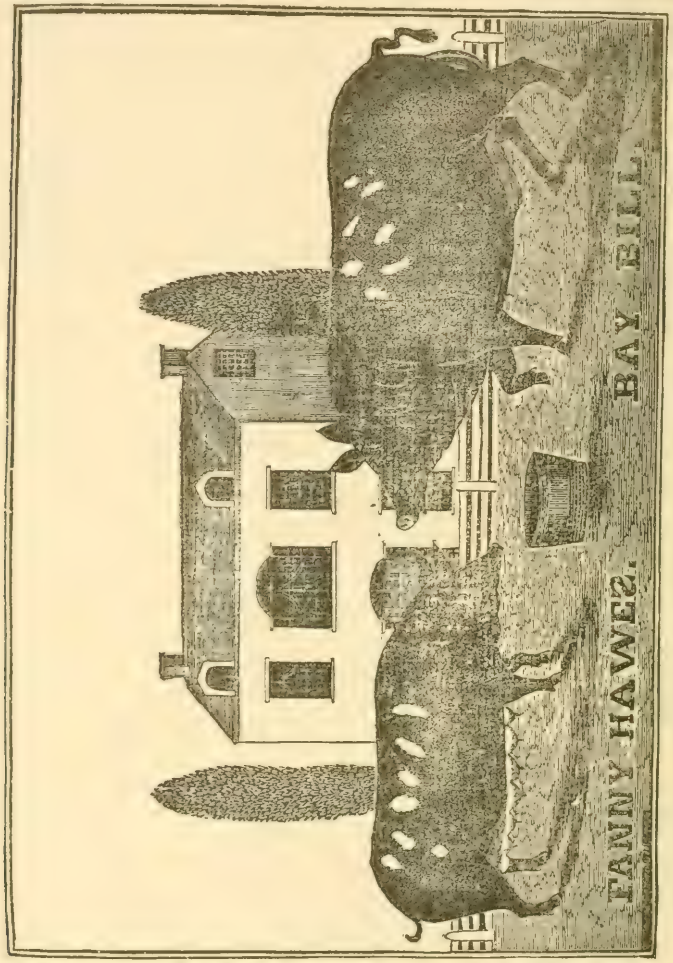
	HOGS.		CORN.	Bushels.
1.	Iowa,	6,031,316	Illinois,	325,792,481
2.	Illinois,	5,170,266	Iowa,	275,014,247
3.	Missouri,	4,553,123	Missouri,	202,414,413
4.	Indiana,	3,186,413	Indiana,	115,482,300
5.	Ohio,	3,141,333	Ohio,	111,877,124
6.	Kentucky,	2,225,225	Kansas,	105,729,325

From statistics furnished by the Agricultural Department at Washington, we are enabled to give the statistics in

1884.

	HOGS.		CORN.	Bushels.
1.	Iowa,	4,800,998	Illinois,	268,998,000
2.	Illinois,	4,090,681	Iowa,	242,496,000
3	Missouri,	4,210,193	Missouri,	196 861,000
4.	Indiana,	2,801,211	Kansas,	158,390,000
5.	Ohio,	2,417,128	Indiana,	131,994,000
6.	Texas,	2,2-3,081	Nebraska,	129,426,000

From the foregoing it will be noticed how nearly the increase in hogs and corn are together, and where the corn belt is now settling down. Had we the space to give the figures of more States, the same result would have been apparent, viz.: As a rule the increase and decrease of



NOTED BERKSHIRES IN 1838.

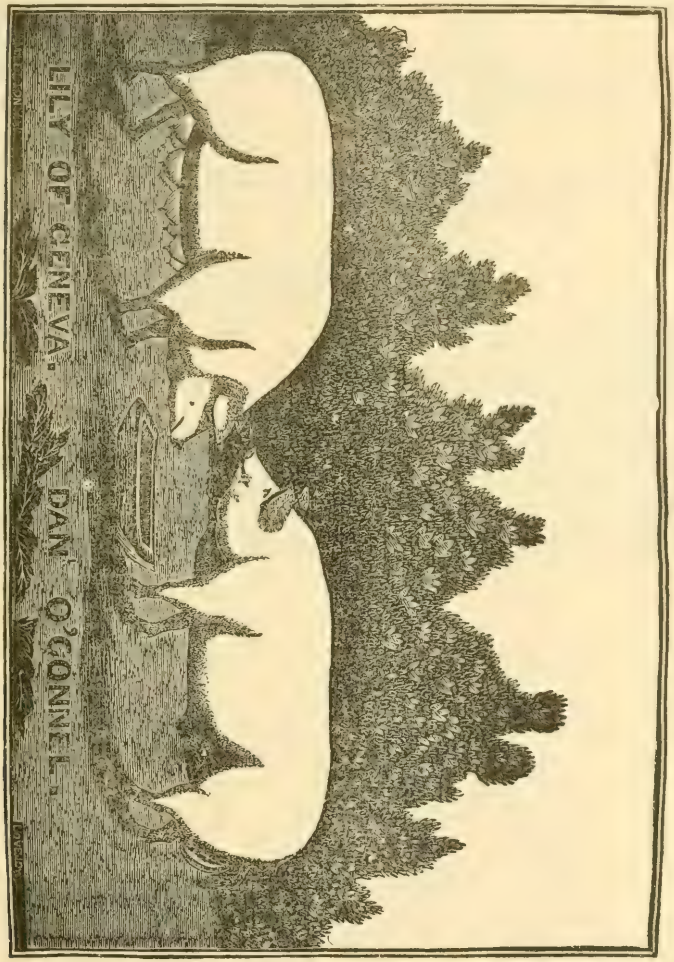
the supply of corn and hogs were closely allied. It also shows why the *Battle of the Breeds* took place in Ohio, Kentucky and Tennessee, for it was there the most corn and hogs were then to be found.

We also in this place give our readers a specimen illustration of Berkshires in 1838, by Kentucky artists. The original appeared in the

Franklin Farmer, and we had them photographed, so that we have an exact reproduction, but reduced in size.

These hogs were noted ones in their day, selling for $150 each, and descended from the Hawes importation of 1832.

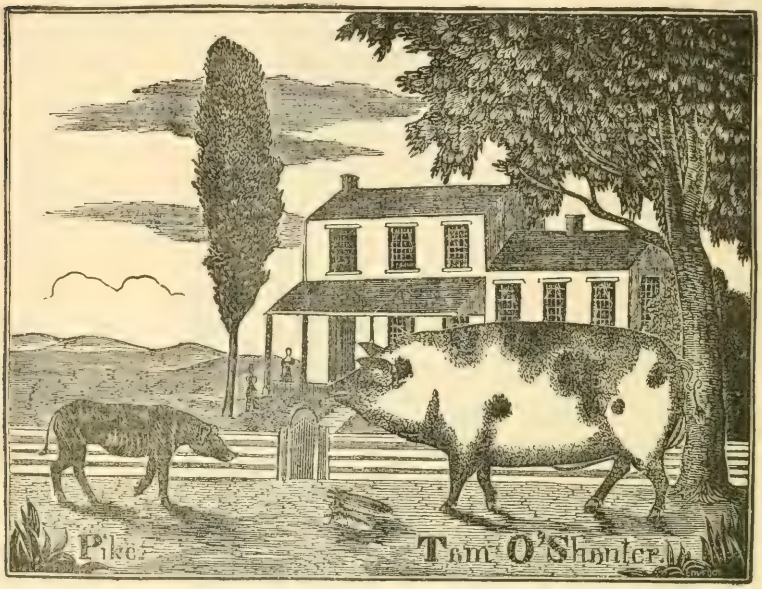
The Irish Grazier was also awarded a place for his form in the same



NOTED IRISH GRAZIERS IN 1838.

paper during the same year, in fact in the same issue. These, among the most celebrated of the so-called Irish Graziers, were bred by Mr. Greer, of Morgan County, Illinois, the importer, and were farrowed in 1836, and taken to Kentucky while pigs, winning many prizes, and afterwards selling for $150 each.

We are also enabled to give a picture of a cross of the two breeds, Berkshire and Irish Grazier. The hog, Tom O'Shanter, was sired by Bay Bill and out of Lily of Geneva, and it is claimed by the breeder, Mr. J. E. Letton, a friend of the Berkshire, better than either of the parents:



We have been at considerable trouble and expense to obtain these illustrations, believing they will not only instruct but amuse. The small black animal is designed to represent a scrub hog, known in Kentucky as *Land Pikes*.

[Cuts, illustrating other crosses and pure bred, will be found on other pages and distributed through the book.]

Since 1840 there have appeared several new breeds, or old breeds with new names, but the principal ones that have attracted general attention, are: Improved Suffolks, Chester Whites, Jersey Reds, Duroc, Jefferson County, Cheshires, Victorias, and Poland Chinas. About 1845, we find less interest manifested in improving the hog; at least there were fewer importations, and for many years the Berkshire was the bone that many disappointed men were picking at. Many persons who had paid large prices and expected great results, were disappointed, hence any and all new importations were viewed with suspicion. In addition to all this, old pod-auger farmers, who still clung to the scrub, were adding insult to injury by saying, accompanied by a sarcastic smile: "*I told you so.*" It was under such depression that the Suffolks, York-

shires, Cheshires, Middlesex, and other breeds, were brought into the United States, and naturally they made but slow progress. In the meantime, the intelligent, enterprising farmers of the Miami Valley were pursuing a steady course of progress, and by judicious selections, perfecting a breed that was proving to be not only practical and profitable, but was assuming comely proportions.

The Chester White had long been favorably known in Pennsylvania, but it was not until in the *fifties* that it began to spread abroad, and during the war its popularity reached high water mark. In about 1855 the Hog Cholera first appeared, and for a long time it discouraged the swine breeders, and for that matter it occasionally worries them even yet. During, and since the war, the Berkshire again rallied, and its friends tried their former tactics, but it has failed to get at the front, although it holds a strong position. From 1860 the Magie, Butler Co., Dick Creek, Gregory Creek, and Poland-China (different names for the same breed), having conquered all opposition in the Miami Valley, began to spread Westward, until now under the common name of the Poland-China, it is the most popular of all the improved breeds.

During the war prices ran so high that any kind of a hog was profitable, and the scrub flourished alongside of its improved brother. Every kind of hog, and most any treatment, proved profitable. Here is a picture, No. 63, showing the common hog, and feed, in war times:

About 1870 to 1873 the Red Jersey and Duroc, which had lain quietly, though holding their own firmly in New Jersey and portions of New

York, began to be boomed as cholera-proof and possessing great hardiness of constitution as well as great aptitude to fatten, until about 1882-83; but it being demonstrated that it turned up its toes as promptly *upon demand* by cholera as any other, it has been gradually losing ground.

In 1881-2-3-4 the Indiana Victoria family went to the front at the Chicago Fat Stock Shows.

The Suffolk has for many years had quite a number of steadfast and enthusiastic friends who are still vigorously standing up for their favorite.

The American breeds, and especially the Poland-China, lead all the English varieties. There are, however, many persons who adhere to the Berkshire, because he is so "English, you *n-a-w*!" But the every-day, practical, all-wool-and-a-yard-wide, contented, vigorous, profitable American breeds are far in advance of all foreign breeds, not only for beauty of form, but for practical utility.

They may not be as old, nor be able to trace their family name "*back to the flood*," but in a country where there is little veneration for the "*has beens*," the "*izzers*" are the things sought. The hog that wins must be old enough to prove that he can reproduce himself, and then be able to show form and substance and practical utility.

EXISTING BREEDS IN THE UNITED STATES.

There are now in the United States the following named breeds, that have more or less popularity: Chester White, Ohio Improved Chester, Cheshire, Berkshire, Duroc, Essex, Jersey Red, Jefferson Co., Poland-China, Suffolk, Victoria and Yorkshire of the improved breeds, and the common hog.

In another chapter we give the history and characteristics of each of the improved breeds and their several standards of excellence, as prepared by the friends of each. It could hardly be expected that at a meeting of friends and admirers the defects of each breed should be pointed out. Yet, each breed has defects and imperfections. We have given in full what, and the best, that friends could say for each, but the writer of a book ought to have opinions of his own and the courage to speak them.

Such opinions may, and doubtless are, more or less influenced by prejudice and self-interest, but not more so than is usual, and what may be said in relation to each is the author's views, and should be received with all due allowance.

CHESTER WHITE

Is a large hog, coarse hair, inclining frequently to bristles. Color, clear white, with occasionally blue spots on the skin; medium sized head; face slightly dished; ears rather large, thick and lopping; heavy jowl; large, rather coarse bones; legs medium length, and fairly good feet; fair back, full quarters, deep bodies; good feeders, prolific, and good nurses; fattening at any age, and growing until three or four years of age. They are well distributed over Pennsylvania, and can be found in considerable numbers in New York, Northern Ohio, Michigan, Wisconsin and Kentucky, and a few in Indiana, Illinois, Iowa, Missouri, Kansas and Tennessee. The principal objections to them are coarseness of grain and inability to stand the black mud of the prairies as well as the dark-colored breeds. They now breed quite uniform, and are a fairly good and profitable hog for Northern localities and on dry, sandy soils.

OHIO IMPROVED CHESTER.

They are much like the Chester White, except not so good nor so purely-bred. We once purchased a trio of L. B. Silver, and they were so long and lean, and such poor feeders that we sold them as stockers at stock hog prices. They cost us $20 each at weaning time. They were white, and had fairly good head and ears, but were mangy, and we could not make them grow. If a Chester White is desired, purchase the pure bred rather than this alleged improvement.

CHESHIRES.

They are a medium or large sized hog; pure white hair, with occasionally blue spots on the skin; fair head; face slightly dished; ears erect and not large; fairly good neck and back; large shoulders, fair hams; depth of body medium, and rather high on the leg. They are prolific, and the sows fair nurses. They grow rapidly and fatten at any age. They are liable to mange and sunburn; ears easily become sore; ham rather short, not coming down enough on leg, and deficient in the twist. They are very fair and reasonably profitable hogs. They are confined to New York and New England, although there are a few of them in the Middle, Western and Southern States.

BERKSHIRE.

A medium sized hog, when well cared for, but a very small one on ordinary care; color, black, with white feet: white in face and on tip of tail; coarse, broad head; dished face; light jowls; erect ears; long neck; extra good backs; large shoulders; small hams; round body, high on leg; fairly good, tough legs, but many have poor feet; hind legs usually crooked; they have good hair; are prolific, and the sows careful mothers. With extra care and attention, they grow rapidly, and as little pigs they are very handsome. On ordinary care they are slow growers and small size. They are very restless and inclined to be breachy. They are excellent to follow cattle, as they are active and industrious, and having upright ears and good sized eyes, see and avoid danger promptly. They undoubtedly are more widely distributed than any other breed, but at the same time they are rarely in the majority in any locality, and in some States but few are found. As a farmer's hog they are not a success, but if carefully bred and generously fed, they make fair sized and good hogs.

DUROC, OR RED BERKSHIRE

Is a medium sized hog, with red or yellowish coarse hair; in shape much like the Berkshire, except they have more depth of body. They are sometimes, and in the opinion of the author, improperly classed with Jersey Reds, their only resemblance being in color. It is said they are quiet, good feeders, prolific, and are now, and have been, so mixed with Jersey Reds, that but few pure-bred animals are to be found. We have never handled them, and our opinion is largely made up from observation.

ESSEX.

A small sized black or plum colored hog, with short head, dished face, erect ears, short, well arched necks, good back, deep body, fair jowl, tough, fine bone, good feet, are prolific, but sows rather poor sucklers. On ordinary feed they are slow growers, and too small. They are quiet in disposition and fatten easily. They are not popular in the United States, and are not often found, except in New York, and portions of New England, and in Wisconsin. "Harris on the Pig" gave them something of a boom, but they have not met expectations.

JEFFERSON COUNTY.

This breed is so like the Cheshire that we are unable to distinguish any difference, except the Jefferson County are in form more like the Berkshire. They are hardly known outside of their particular locality in New York, and but few can be found in any part of the West.

JERSEY RED.

A large, coarse grained, coarse redish haired, coarse boned hog, with large head; heavy, thick, lopped ears; long neck; long, deep body; poor back; slab-sided; short, heavy legs; poor feet. He is a greedy feeder, grows rapidly, and attains large size; is prolific, hardy, and the sows good nurses. The modern Duroc-Jersey is not so large and more comely, but is still a coarse grained and coarse haired hog. It has achieved considerable popularity on account of its having for some time been considered cholera proof, but the cholera takes the red as quickly and effectually as any other. The Duroc-Jersey does well on ordinary treatment and grows rapidly. This gives him considerable deserved popularity. He is well disseminated over the Middle, Western, and some of the Southern States, and in his rough-and-ready sort of a way, is a fairly good hog.

POLAND-CHINA

Is a large breed, of dark color, varying from dark spotted to nearly black; a medium sized head; face straight or slightly dished; ears lopped and of medium size; neck short and thick; jowls large and full; back fair; body deep and full; expansive belly; quarters large and full; legs short; bone medium; feet fairly good; is prolific, hardy and sows fairly good mothers. The back, feet and limbs need careful attention in breeding. It fattens rapidly at any age, and can easily be made to weigh at nine to ten months, three to four hundred pounds, and six to eight hundred at eighteen months to two years. It is a quiet, good dispositioned, yet industrious hog. It does better on ordinary treatment than any other breed, and at the same time responds as quickly and profitably to generous feed as any. It has a more general distribution over the Middle, Western and West Southern States than all other of the improved breeds. It is gradually and surely working into favor in the East, and may fairly be said to be the most popular breed of swine in the United States.

SUFFOLK.

A small, white hog, with small head; very dished face; short, erect ears; short, full neck; nice, broad back; good quarters; rather thin on belly; fair depth of body; short and rather slender legs, and not very good feet; it is prolific, and sows are fair sucklers. It is a quiet, easy feeder, of kind disposition, and on ordinary farm treatment a slow grower, but never gets large enough. It is better adapted to small pens in villages and towns than on farms. It has its strongest representation in the Eastern States, although it has had some limited success in the West. It can hardly be said to be popular, yet it is a hardy, nice, little hog that has some very earnest supporters.

VICTORIA.

There are two varieties in this country claiming the above name—one originating in New York, and in appearance much like the Cheshire, but it is scarcely known or used beyond the limits of the county where it originated.

The second is the Indiana Victorias, originated by Scheidt & Davis. It is a medium sized, white hog, with short head, dished face, upright ears, short neck, large shoulders, medium back, deep body, only fair hams, short, fairly good legs, and medium feet. It is thin on belly, deficient in twist. It has been successfully exhibited at National Fat Stock Shows at Chicago for several years, and while not by any means perfect, is a fairly good hog. It is gaining a fair footing in several localities.

SMALL YORKSHIRE.

This breed is much like the Suffolk, except it has a shorter and more abrupt dish in face, and is a little higher on leg. It is a good, little white hog, and has considerable popularity in the East and some standing room in the Middle and Western States. It is better calculated for villages than farms.

COMMON HOG.

The common hog has different names in different localities, some of which are as follows: "Elm-Peelers," "Hazel Splitters," "Wind-Splitters," "Potato-Diggers," "Early Goodrich," "Aligators," "All Bone China White," "Tramps," "None-such," "Land Pike," "Cotton Planter," "Tonawanta," etc. By whatever name he is known or in whatever locality he may be, he is the same long nosed, long eared, long necked, long legged, slab-sided, small hamed, coarse haired, large bristled, gaunt, restless, hard feeder, and an impudent "cuss" that has existed on this continent for more than one hundred years. In color he is as varied as the rainbow, but his pride is not in color; *he dotes on his shape and speed.* He still lurks in every county, but he is being hard pressed by the good breeds and their crosses. However his most aggressive and unrelenting foes are the agricultural and live stock papers. As they visit the homes of the farmer, spreading information and developing intelligence and enterprise, the scrub vanishes from the farm. May the good work go on until the scrub shall be only a thing of the past.

SELECTING AND ARRANGING THE FARM.

It is not every farm, nor enclosure of land, that is desirable, or even suitable for raising live stock; and this is especially true in hog-raising. Many of the successes and failures in swine culture can be largely attributed to the adaptability of the farm for such purpose. It is important, then, for one who contemplates engaging in swine breeding, that he select a farm suitable, or, if he has a farm, to carefully consider whether it is so situated and located, as with reasonable diligence and judgment, he may feel that his chances for success are fair. If the farm now owned is not, and can not, without great expense, be fitted for such business, it is the part of wisdom to try some other enterprise, or sell out and buy a farm that is adapted to such business.

In short, live stock raising is not, as many suppose, a "hit and miss" business. It is governed, or should be, by business principles and ideas and so treated, or failure and disgust will follow as surely as night does the day. Let us then inquire and consider what elements are desirable and essential for a successful hog farm, and for convenience we will divide the consideration of the question into five heads or statements, as follows:

1. The "*lay of the land*" and soil.
2. The opportunities for obtaining at all seasons a plentiful and convenient supply of pure water.
3. The shape of the farm lots, and natural advantages for convenient arrangement so that the labor may be as light as possible.
4. The sanitary or healthfulness of the location.
5. The facility for getting to and from market, and easy accessibility by purchasers.

The above propositions will be considered in their order, not because they come properly so, but for convenience.

First, as to the position and lay of the land: At least one-third of the farm should be high, self-draining, rolling land, with a southern slope. The southern slope is best, for the reason that it is dryest, and in early spring admits more hours of sunshine than an east, west, or

north slope. Between an east and west slope I prefer the east, not because of the better opportunities of sunshine, but because it is less exposed to fierce, cold winds. The north slope is the least desirable, but is still better than level land. Whatever direction the slope may have, it should be sufficient to drain the high ground easily and quickly, and yet not so steep as to form, during hard rains, torrents and rivulets that will carry off into water-courses the rich washings of manure from the lots. The loss of the manure is the principal objection to steep hillsides. The high ground should be so situated that the slopes should drain upon your low ground and in that way the rich and fertile washings of the yards, stables and pens will pass upon, and into, your fields used for raising grain. Manure on farms, and especially in the West, is not sufficiently regarded; in fact, many farmers seem to think that it is a fine stroke of judgment to so arrange their stables, sheds and pens, that the rains may wash the manure off into a creek and thereby keep the lots clean; such cleanliness is easy for the farmer, and no doubt healthful for the stock, but is death to the land. It is just as easy for the farmer, and healthful for the stock, to have the slopes guide and carry the rich fertilizers onto the low cultivated lands, and thereby keep the strength and productiveness of the soil up to a high standard, if land is properly selected. If the high land does not slope toward the low land, then the manure and rich washings should be conducted to it by ditches dug around the base of the slopes and carried around to the lower lands; or basins may be constructed to catch and save the manure, and then at leisure the rich deposits of the basins be hauled out and placed where most needed. The soil of the high ground should be naturally fertile enough to produce good blue grass and clover, and should, therefore, be neither sandy nor stony and poor. The low ground should be rich, fertile, warm and deep soil, and sufficiently undulating to be free from marshes and standing water. Do not forget to avoid low, wet, marshy land, and steep, poor, stony points, although the latter should be preferred as between the two. Level, sandy land is very good, but the objection to it is, that the rich washings pass into the sand, and is as effectually gone as though washed into a creek and river, unless you have a good, hard subsoil. As will be seen, the principal and desirable things to be secured, are high, dry, warm and healthy feed and shelter lots, and facilities for saving the manure, together with rich, fertile grain fields.

Next we will consider the second proposition, viz.: Plentiful supply of pure water. The high ground should be abundantly supplied with numerous strong springs, sufficient to supply each lot and apartment with an abundance of pure running water in all seasons. If you can not have a spring in each lot, then so arrange the lots that at least a corner of each or some part of it shall cover the discharge of the spring, and conduct the water in tiling instead of an open stream,

fix a basin in each lot, from four to eight feet wide and eight to twelve feet long, and four to ten inches deep, constructed of plank, stones, brick or cement; leave these basins open and allow the stream from the tile or underdrain, which carries the water from the spring to empty into the upper end of the basin, and near the top, so as to make the basin hold from three to eight inches depth of water. Also arrange a sliding gate at lower end, so that the gate may be occasionally raised and the basins cleaned out; the discharge from the basin should also pass into a tile or covered drain to carry the surplus water off. By thus covering the stream, except at point of basins, you keep stock from making wallow holes and a muddy stream, while in winter the water never freezes over, unless at rare intervals in extreme cold weather. If your farm does not contain sufficient or any springs, then the water should be supplied by wells, and water pumped therefrom by aid of wind-mills or horse-power into large tanks, and then conducted from the tanks to the several lots or fields, emptying into troughs or basins, as hereinbefore described, and the discharge water carried off by tiling. Wells may be placed where four fields or lots corner together, thereby save in piping. The location of the wells, however, should be with regard to supply of water as well as convenience of discharge into fields, and each person must exercise his own judgment as to best locations. Tread-mills may be used for power to run pumps, and if a bull is kept on the place he can be used to run the power; it will not only save the horses, but will be an advantage to the bull, by furnishing him needed exercise. Large boars may be made to do a similar service. Whatever mode is resorted to, do not forget that pure water, in abundance and always accessible for stock, is of the greatest importance. A water supply from creeks, rivers or streams that pass through or arise upon land other than your own, are dangerous sources of supply for hogs; for the reason that they are almost certain conduits of disease. Hog cholera follows the line of running streams, big and little, with unerring regularity. Pond-water is unhealthy, and stock should not be allowed to drink it. It is full of malaria, and sooner or later will entail disease upon hogs. They may seemingly do well for a while, but disease and disaster will surely follow the continued use of stagnant and filthy pond-water.

Now, as to the third proposition, which includes shape of farm, lots, arrangements, etc.: As a rule, the nearer square the farm and lots, the more convenient it will be both for culture and stock. The pasture and stock-lots should be comparatively small and numerous, for several reasons, among which are, that it allows a separation of different kinds of stock, and of the different ages of the same kind of stock; it affords an opportunity of change of pasture. It is an old and true adage that "a change of pasture makes fat calves," and it is no less true of other live stock. Doubtless, all the readers of this book have frequently

noticed the greed and eagerness with which stock eat the grass of meadows and pastures that have not been used, when the grass is fresh, vigorous, tender and juicy; this is largely owing to the fact that such grass is also free of the smell and taint of the breath and feet of other animals. The same thing will be noticed on any pasture after a heavy shower, when all kinds of stock graze eagerly, the rain having washed off the animal breath and smell from the grass. Dry feed, that has been breathed upon and mussed over, will not be eaten, even by the same animal, until driven to it by extreme hunger; the pasture is in a like manner affected, hence the value of frequent changes of pasture. The new, fresh grass is the first table where everything is fresh, clean and inviting, while the old, much used pasture is the second table where everything is mussed up and uninviting. The various lots should have good natural or artificial shade sufficient to accommodate all stock kept therein during the summer months. The best shade is trees; if there are no trees, then artificial shade should be made, and the best and cheapest is by placing four or five forks in the ground, connected with poles, and covered first with brush and then straw of sufficient depth to shed rain. Such a shed will last for years, but young trees should be set out so that in a few years natural shade will be produced. In every lot *there must be shade* of some kind; humanity and self-interest both dictate it.

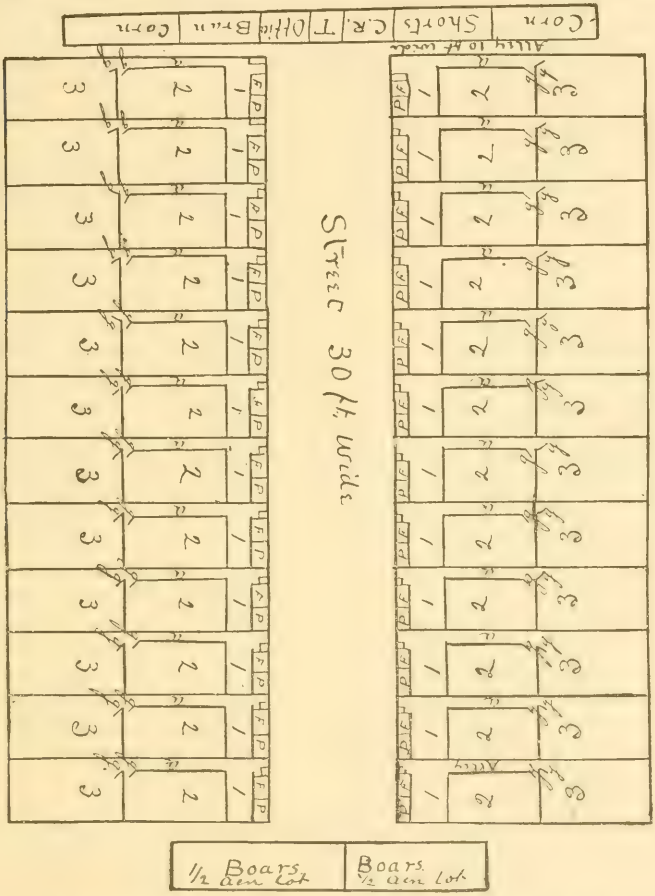
The buildings for man and beast should be located and constructed with reference to comfort, health and convenience. Comfort and health are essential and indispensable elements to thrift. Convenience means a few hours saved every day, which in a lifetime amounts to several years, to say nothing of the "peace of mind that passeth the understanding of the careless and slothful."

In a subsequent chapter will be found plans and suggestions for convenience as to building, and it is only the intention now to call the attention of the reader simply to the location of buildings and the convenience of proximity to each other and to water. By having pens, cribs, stables and sheds near each other, much time and annoyance will be saved. There should also be walks, good and dry, so that it will not be necessary to wade in mud and fifth from one to the other.

PLAN FOR BREEDING PENS AND LOTS.

This is designed to cover twenty acres, and is so arranged as to provide for forty sows and their pigs. The plan may be enlarged if more sows are to be kept and land is abundant. By this plan each sow has a half acre of ground, less the amount of street taken off of each lot. Each lot is 315x66 feet as an entirety, and each one is then divided by a partition fence so as to leave a small lot, 45x66, (Fig. 1) on the front. If desired two grass plots may be made of the back part (Fig. 2 and 3)

and used alternately, and thus with a little more expense of fencing, the breeder will always keep one lot of fresh grass, while the other is being grazed. Lot 1 (Fig. 1) is designed to keep the sow and pigs up, when the weather is bad and ground soft, thereby preserving the back part for grass. The back part, 270x66 feet, is for grazing the sow



and young pigs, when the weather is favorable. Along the street, in front of each lot, are pens, (P) 8x8 feet, with shed roof, fronting south, and glass front extending to within four feet of the door. On the side of the pen is a feeding floor, 8x12 feet, (F). In the corner next to the street is a box for manure. This box, 3x8 feet, may be placed at the outer end of the platform or in the corner. The former is preferable,

as it is not then against the adjoining pen. Small gates opening from front to back lots are indicated on plat by "G." The street is 30 feet wide, and runs the whole length between lots. The cribs, office, and work-shop, lofts for bedding, tank room, well and wind-mill for pumping water, are placed at the end of the street. If preferred, the street can be widened to 40 or 50 feet, and these buildings placed in the middle along between the lots. Water is supplied to each pen by pipes running from the tank along the front of the lots, and hydrants at each feed platform to supply drink, etc. These hydrants may be so arranged as to permit a continual flow of pure water, or turned off at pleasure. When it is desirable to wash pens, or feed floor, have a short hose which can be attached to the hydrant and pens or pigs washed in a few minutes and with but little trouble. It is designed to put a sow, after she is bred, in each lot, keep her there until her pigs are ready to wean, and then turn her in a clover field. Leave each litter in the lot where farrowed until they are required to be separated on account of sexual development, when the boars of two adjoining pens may be put in one lot and the sows in the other, and thus kept until disposed of by sale or slaughter. The advantages of this plan are, first: The sow when carrying her young is kept by herself and will be less liable to disease or abortion; Second, each litter is kept by itself and robbing by larger prevented; also, less liability to disease. Third, no confusion of litters by the breeders; insuring absolute certainty as to the paternity of each pig, and avoids the necessity of ear or other marks. Each lot is large enough to furnish all needed pasturage, and manure can easily be saved for plow ground when wanted.

If there are no trees in the lot a shade may be constructed of posts, rails and straw, by setting down forks, that come 3½ feet above ground, and rails covered with straw. This makes a good, well-ventilated shade. If preferred, cribs for corn can be built over the feed platforms, leaving four to five feet space underneath the crib.

A small trackway may be made in the middle of the street, upon which a hand-car can be run, to haul feed, slop and bedding from buildings at end of street. If possible, select for the street high ground, with a gradual slope on either side.

The first cost of the construction of houses, fences, etc., would be considerable, but the saving from disease, and the convenience would soon repay the first outlay.

The street would be better if run east and west, then the high part of each pen could be made to face the south, and with glass fronts, the pig would receive incalculable benefit from the warm rays of the sun in early spring. But you can, in any event, have sleeping pens facing the south, without reference to the direction of the street.

This plan is not claimed to be perfect, but it is thought to be new, useful, practical, and may suggest to others a basis for improvement.

Water may be supplied to lots and building from springs, or by well, tanks and pipes. By use of hydraulic rams water from springs may be forced into lots and buildings on the farm with a very slight expense.

Water supply in tanks, and from tanks to troughs and basins, may be self-regulating, by using a float on surface of water in the tank or trough, which opens or closes a valve in pipes as the water is taken out or fills up the vessel.

Convenient and large manure pens or basins should be constructed near stables, pens and sheds, both to save the manure and as a sanitary necessity, and they should not only be placed there, but should be used. It is always best to place manure sheds and receptacles on the north side of pens and buildings, so that the odor and exhalations in summer may not be blown into the buildings. The winds in spring, summer and fall generally come from the south, east and west, and those are the seasons when the odors from manure are troublesome. All openings into fields or lots should be by gates; neither bars nor slip-gaps will do in this age of progress.

The fourth proposition is the healthfulness of the location: This is one of great importance, both for man and stock, and should be carefully considered, as the successes and failures in life largely depend upon the way we and our domestic animals feel. If man does not possess good health he can not give that care and attention to his stock that their welfare and importance demands, and if his stock is unhealthy, success can not be expected. The buildings should be placed upon high ground, and surroundings perfectly drained, they should be roomy, well-ventilated and free from dampness, allowing plenty of pure air and light. Sunlight, especially in winter and early spring, is a great health promoter, and the buildings should be so constructed that the warm rays of the sun can be let into them or excluded, as the necessities or pleasure of the occupants require. Vegetation and animals excluded from the rays of the sun lose their natural color and vitality, while sick ones may occasionally be better treated by quiet and comparative darkness; hence the necessity of having your buildings so constructed as to permit and furnish either condition of light or darkness.

The number and extent of the buildings will largely depend upon the size of the farm and amount of stock kept. It may not be amiss, however to state, that, of the buildings for animals, a stable for horses, one or more for cattle and sheep, and pens for hogs, should be built all separate. The practice of crowding several kinds of live stock together under one roof is not the best policy.

In addition every farm should have off to itself, in a quiet, convenient place, a building conveniently and comfortably arranged for sick animals—an *Animal Hospital*—where the sick can be specially cared for, and not be disturbed by or disturb the well ones. Such a building would

soon repay the owner its cost in the better care he would be enabled to give sick and diseased animals, and by affording opportunities of exclusion for animals sick with contagious diseases. A *hospital* is of more importance in swine breeding than any other class of live stock.

Each building used for animals should have exercise lots connected with them, wherein stock can be allowed to take daily exercise, without having to wade in mud and filth.

If the soil is not sufficiently sandy or rolling to insure freedom from mud, make the exercise lots dry and suitable for their purpose by hauling and filling up with sand and gravel. If sand and gravel are too expensive, or not within reach, use cobble-stones or wooden blocks set on end, as streets are made in cities. If you can only make twenty or fifty feet square each year, it will take but a few years to have a large amount of such space. Do not despise the day of small things, if your means are not sufficient for your desires make as much as your means and time will permit, and in a few years you will be surprised at the results.

Lots, if not sufficiently rolling to be thoroughly self-draining, should be effectively tile drained. Buildings should be set sufficiently high, so that by proper openings, a free circulation of air may be had under them. A few panels of portable fence should be kept to use in temporarily enclosing wallow-holes, old straw-stacks, etc. In short, exercise your means and hands continually to make, put and keep buildings and lots clean, pure and healthful.

The last, though not least, proposition under consideration for this chapter, is: Facilities for getting to and from market, etc. A near, lively market, and good, quick way of getting there, with small trouble and expense, is almost half the battle won, in this eager and hustling age. This is true of the general farmer, and applies with greater force to the man who is breeding any kind of live stock. The stock farm should be located near some large city or important town, which is situate upon some one or more of the great thoroughfares of travel, and not in some obscure, half-hidden, out-of-the-way place. As a rule, your customers are largely those who live at a distance; they start out not only to see you but others, and go on through lines to places easily accessible, that are located in the mind of every well-informed person, without the aid of maps. It is a great annoyance to purchasers to have to delay a day or two to make connections on some one-horse railroad or side-track, and they frequently give such "out-of-the-way" places the go-by, rather than suffer the annoyance and delay requisite to reach them. Then again, you, who are located at or near important points upon through lines, have and can obtain superior shipping and mail facilities, all of which are important factors in the race for public favor.

A near, good market affords you not only an opportunity to sell, but

to take the advantage of a depression to buy at low rates such feed and stock animals as may seem desirable.

The live stock breeder of necessity sells largely by advertising, and it is important that purchasers be able to locate him easily (as they will if near an important town or city), and will thereby always include him in their trips. It is also important to have a number of others in the same business near, as most persons will stop off where several herds are close together that would otherwise pass on if but one could be seen. "*Where two or three are gathered together*," there will the purchasers come. Just and fair competition is the life of any business, and especially in live stock.

If competitors are mean backbiters, it is best to be near where people will come and see for themselves, if some distance off a lie might go undetected and unrefuted.

All persons can not, however, live near the important towns situated on through lines, and many are attached to their own locations by long and close associations, and would not, if they could, *change base*. Such persons have an unequal fight, but by vigorous advertising, kind, courteous manners, strict integrity, and skillful management of their stock, can and will bring and hold customers. Their position can be greatly improved by clustering around it other breeders or inducing their neighbors to take a hand, and thereby form a *colony*, that will help attract buyers, and when once obtained, good stock and honorable dealing will hold them, even against more fortunately situated business rivals.

If you have not the best farm or location, do the best you can with what you have, and overcome natural disadvantages by artificial help, and illustrate that man can often control circumstances as well as be controled by them.

Under a heading, "*How to Advertise*," you may find some suggestions that will be of benefit to you.

PENS—THEIR LOCATION AND CONSTRUCTION.

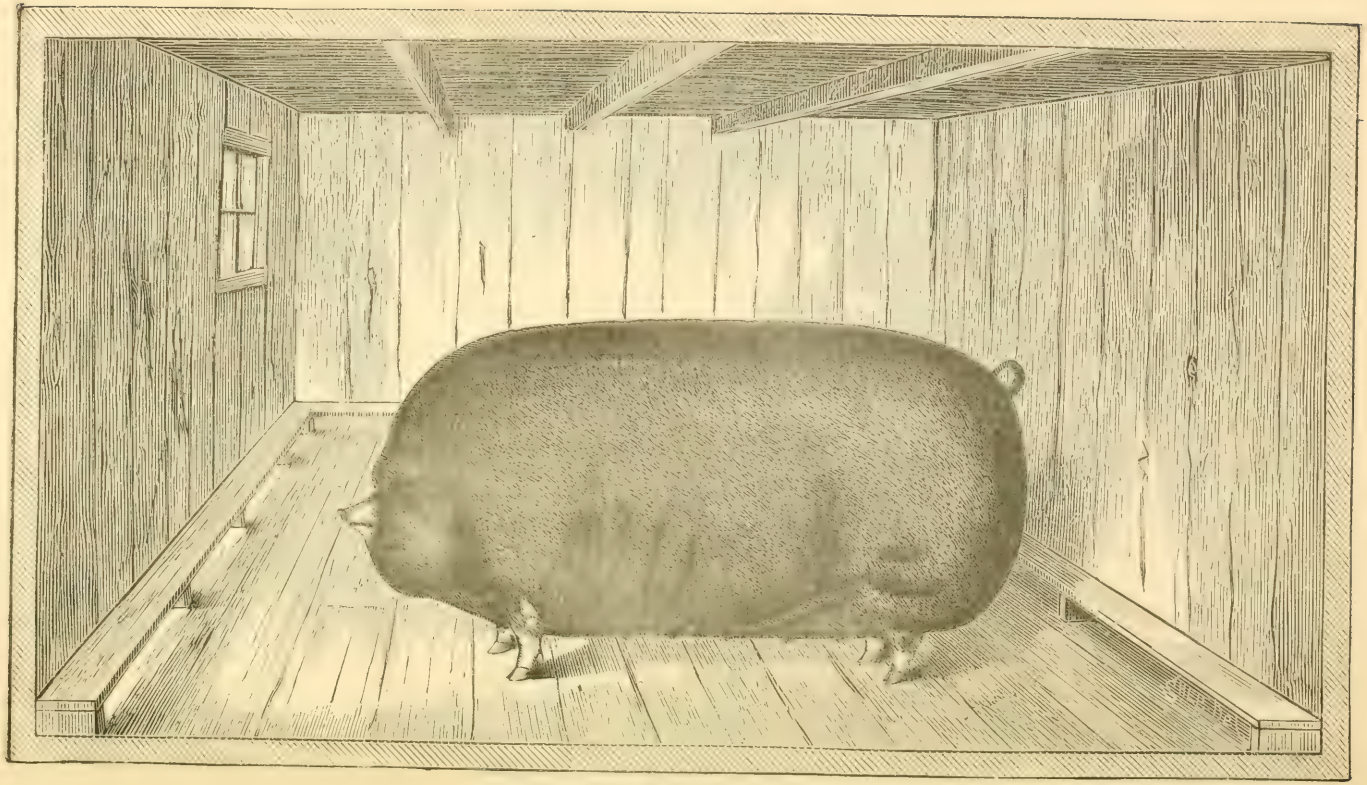
Before commencing to stock a farm some adequate and comfortable provision should be made for shelter and protection for the stock to be put on the place. The number, size and kind of pens for swine should of course be regulated by the number of animals, the amount of capital to invest, and the taste of the person who is to engage in the enterprise. It is poor policy to run in debt, hence the beginning had better be small and sure, than to attempt to encumber the enterprise with an interest-bearing burden. It will not do to set down and figure on imaginary profits, nor on any "*dead sure*" basis, for figures are seductive, and if they do not lie, they worry mankind often, and greviously. Assuming that all these things have been fully considered, and that the person is in shape and has a love for the business, it is in order to give some directions that may be of value, especially to the inexperienced.

In the location and construction of pens, at least two important things must not be overlooked, viz.: health and convenience, but if either is to be sacrificed let it be the latter.

Several plans for pens are here submitted for consideration, some of which are large, convenient and expensive, others of medium expense, and still others cheap and yet practical. They will be described in detail as we progress.

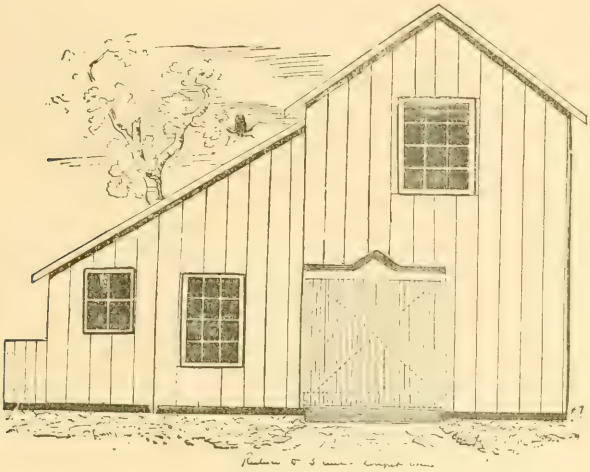
The following cuts give the end view and ground plan of a large hog house containing twelve pens, a driveway, which can be used as a feeding-floor for fattening hogs, a corn-crib, office room, well, stairway to second floor, and bins for shorts, bran and oats:

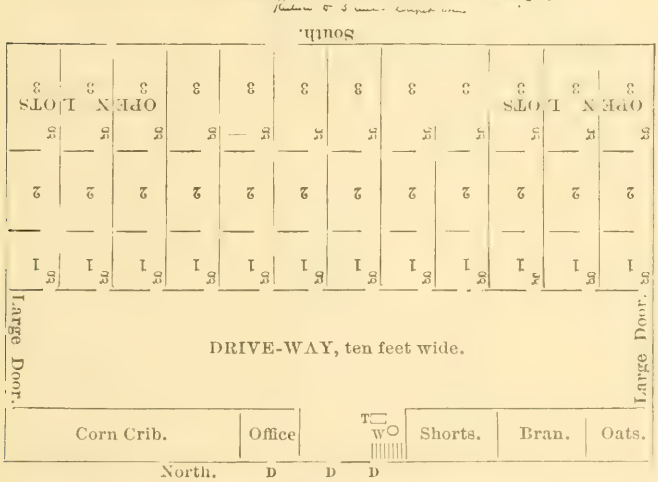
The ground plan and elevations, need but little explanation. Pens marked 1 are feeding pens; back of them, pens marked 2, are sleeping apartments. These pens are, each and all, eight by eight feet. On the north side are corn-crib, office, stairway, well, cooker, and bins for shorts, bran and oats. These can be arranged as indicated, or changed to suit convenience. The crib and bins can extend up into the second floor, and thus made to hold more. The driveway has a large door at either end, so as to admit wagon with grain, straw, lumber, etc. The office has a stove, desk and work-bench,



INSIDE VIEW OF BREEDING PEN.

where pig-boxes can be made in cold weather, and extra boxes can in that way be made in winter, when out-door work is impossible, and stored in the loft. By so arranging work, boxes can always be kept on hand, and when a pig is sold during the busy season, you do not have to stop and make a box.





Where the ground is suitable a cellar should be made under the north half, in which to store roots, pumpkins, boxes, etc. The pens marked 3 are open lots on south side, 8x26, or 24 feet. The size of the building is 33x96 feet. The two-story part is 17x96 and the shed part, 15x96 feet.

The sleeping pens are under the lowest part of shed, and the plan requires glass in that part of roof and on side from top to within three feet of floor. This gives plenty of light and sunshine in the beds for cold, early spring weather, when a little sunshine is *a big thing for piggy*. The portion over the feeding pens and main part on second floor is for straw and bedding material, and openings are left on second floor at back on south side so the bedding can be thrown down into the sleeping apartments direct, and save carrying all over the house. A little pen can be made in the corner of each open lot for manure. The office should be boarded up tight from floor three feet high, and sliding windows in upper part. If you desire, these windows can be opened, and the whole house kept tolerable comfortable by using a large stove. If you want to use the hog house in early winter for fattening, you can use the driveway as a feeding floor, by fastening open the doors, "g," and allow the pens back to be used as sleeping apartments. The height of the first story is 7 feet in the clear, and the partitions in the pens, 3½ feet.

The bill of lumber for such a building is as follows: Sills, 8x8 in. square, 1,888 feet; 194 joists for floor,2x8 in., 18 ft. long, 4,756 feet; 97 joists for second floor,2x6 in., 1,746 feet; 6 posts, 4x4, 12 ft. long, 96 feet; 35 pieces, 2x4, 14 ft. long, 333 feet; 23 pieces, 2x4, 16 ft. long, for partition, 276 feet; 88 pieces, 2x4, 14 ft. long, rafters, 836 feet; 44 pieces, 2x2, 18 ft., rafters, 528 feet; flooring, in. plank, 4,700 feet; siding, 3,114 feet; sheeting, 3,000 feet; shingles, 34,000; 6 windows, $3 each; inch plank for pens, 1,408 feet; inch plank for bins, 700 feet; 2 kegs of spikes; 5 kegs of 8-penny nails; 125 pounds of shingle-nails. The cost will be from $600 to $800, owing to locality, prices of lumber, etc.; this includes $175 for carpenter work.

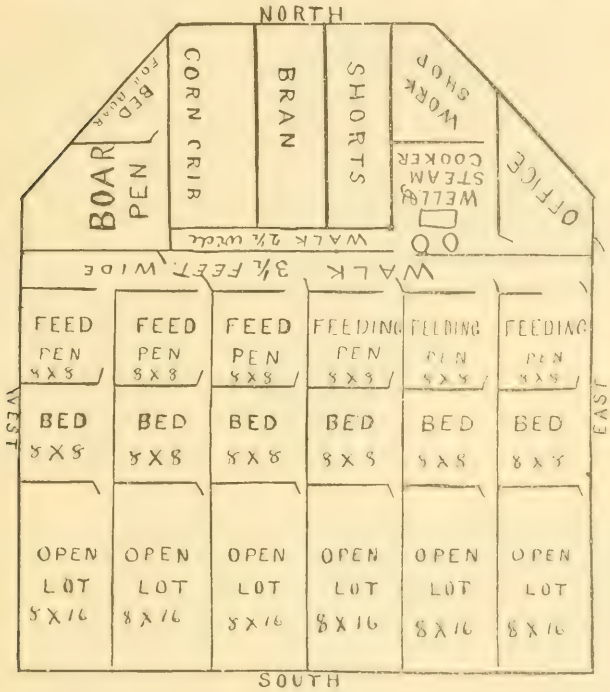
The cost of the building can be greatly lessened by making ground floors and setting posts in ground, and where the ground is suitable, the ground floor is just as good, if sand is used in sleeping apartments. The building contains twelve breeding pens, and the large floor or driveway can be used for exercising the sows and pigs in bad weather, as well as a feeding place for fall fatting hogs; also to feed pigs soaked corn and slop away from the sows until the pigs are large enough to be weaned.

The next cut presents a plan of a hog house containing six breeding pens, boar pen, work-shop, office, bins for shorts, bran and corn, room for well, cooker, and two walks—one three and one-half feet wide—the other a shorter one, two and one-half feet wide. This building may be made one or two stories high; if one story, it costs $175 to $200, owing to locality; if two stories, from $250 to $300. It has a three-sided front, and its south side is square and fifty feet wide on that side, and forty feet from back side to longest point front.

The bill of lumber for a one-story building of this plan is as follows:

Sills, 8x8, 1,050 feet; 100 2x8, 18 ft. long, 2,400 feet; 8 posts, 4x4, 8 ft. long, 48 feet; 50 pieces, 2x4, 24 ft. long, 800 feet; flooring, 1,600 feet; siding, 1,360 feet; sheeting, 2,000 feet; plank for pens, 800 feet; plank for bins, 500 feet; 14 pieces, 2x4, for partitions, 16 feet, 168 feet; 15,000 shingles; 10 windows, at $3 each; 1 keg of spikes; 2 kegs of 8-penny nails; 75 pounds of shingle-nails.

This makes a very convenient and nobby little hog house, and a sec-

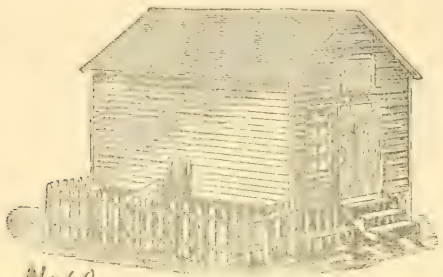


ond story can be added at an expense of about one hundred dollars.

The next cut is one taken from the *American Agriculturist*, and for small lots in towns has many advantages:

It stands on eight cedar posts, set three feet in the ground. The yard is fourteen feet by twenty feet, being four feet wider than the building, and four feet longer, extending under the whole, with an incline running up on the outside of the building to the feeding floor, where there is a door two by three feet. The building is ten by sixteen feet, and ten feet high; first story six and one-half feet, with two-inch tongued and grooved tight floor; second story, three feet under the eaves, with a door for putting in bedding. There is a feed trough extending partly

across the front of the feeding-floor; it has a swing partition over the front edge, with a fastener so arranged that when you put your knee against it, and push it back, a pin drops over the inner edge of the trough, and holds it in that position until the feed is in the trough, so that a pig can not get his nose into the pail while anyone is putting feed in the trough. The post on one side and end of the building forms that part of the yard; the other side and end has longer posts to prevent the pigs from getting out. The front door hangs on overhead rollers, and is pushed past the window when open, on the inside. There is a partition three feet high between the sleeping and feeding floors. The advantages of this pen are, economy in ground room, cool, comfortable yard, which all the pigs enjoy very much in warm weather, cleanliness and neatness in the building, and no place about it to harbor rats. The cost can be much or little, depending on the size, style of finish, etc. Mine cost about thirty dollars, being sheeted up with pine boards, and covered roof and sides with tarred felt paper, shingled with good shingles, and sided with clear white pine siding, and painted.



No. 10. A CONVENIENT PIG-PEN.

The next cut is that of a Nebraska piggery, taken from the *Breeders'*

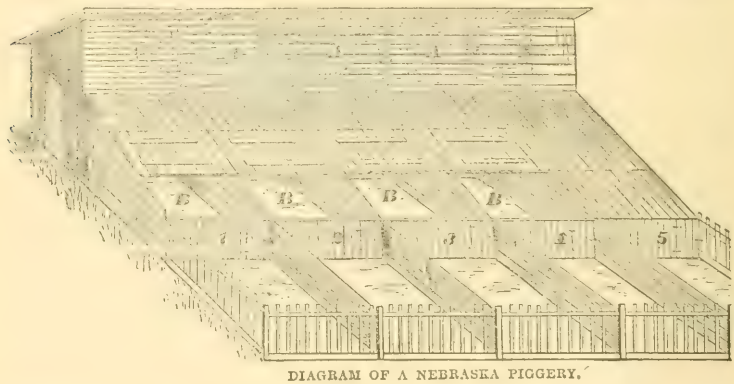


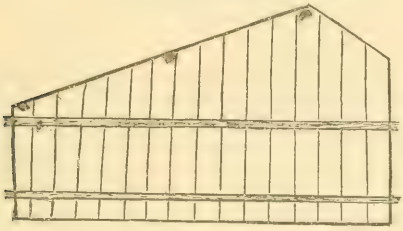
DIAGRAM OF A NEBRASKA PIGGERY.

Gazette. We can not give the cost or bill of materials, but it looks like a convenient building. It is described as follows:

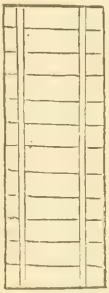
"The drawing explains itself: A, A, A, A, A, are grain bins, 12x12, the whole sixty feet in length. The pens are attached to the south side

of this. B, B, B, B, B, being 'bunks,' 6x8, with a permanent cover, reaching half-way down the incline, with a battened door on hinges attached, which, when closed down completes the roof, as shown on right of cut. 1, 2, 3, 4, and 5, are open pens, connected with the "bunks.'"

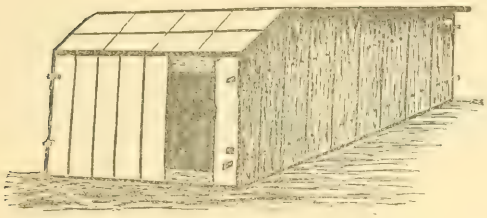
The next three cuts are views of a Butler County movable pen, and it is quite convenient, cheap and durable.



SIDE.



BACK.



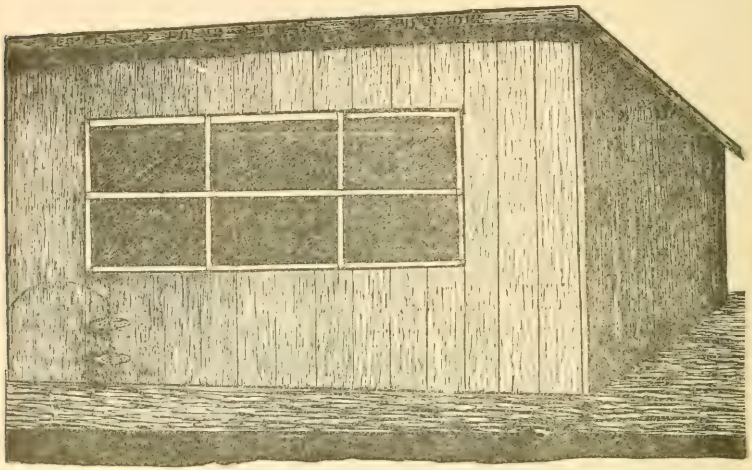
FRONT.

BUTLER COUNTY PEN

Bill of materials, and how to make it: 4 pieces, 2x2, 12 ft. long; 2 pieces, 2:4, 12 ft. long; 125 feet tongued and grooved flooring for sides, ends and roof; sash and glass, $2.

The flooring timber should be of the best quality, and free from knots and wind-shakes. Cut 4 rails or nail two, 2x4, 6 feet long, for back and point, ; cut siding enough for back, 3 feet long, and for front, 4 feet long, leaving space for opening in front; nail boards or slats for back and front; mortice holes in front and back for the sides; cut 4 rails, 2x2, 5½ feet long; nail side-boards on, leaving three inches at each end of rails for tenons; tenons should be made 1x2, and 3 inches long, leaving pen 5 ft. at side; draw bore the tenons with a ⅝ bit; put tenons through mortises of back and ends, and secure with pins; cut three pieces, 2x2, for roof; nail roof plank on to pieces; cut slots in sides for pieces supporting roof and put on roof to fit sash for small part of roof; paint well outside and whitewash inside. To take pen down for moving, take off top, pull out pins back and front, and the pen is in five pieces, all easy to load on sled or wagon, or a sled may be slipped under without taking apart.

The next is a cheap pen, 8x8 feet, and 7 feet high at front and 6 at back, or if preferred, and it is much better to make it 8x12 feet. This gives a small room in one corner for a portable sheet-iron stove, in feeding-place and place for a bed for sow.

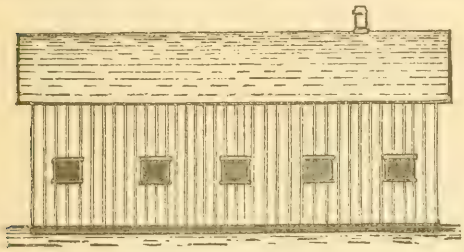


The building is best to have tongued and grooved planks (common flooring) for sides, ends and roof, and painted with roofing-paint. Made in that way, for an 8x12 house, the following material will be necessary: 400 feet of flooring plank; 3 pieces, 2x4, 14 ft. long; 1 piece, 2x4, 18 ft. long; 1 piece, 2x4, 16 ft. long; 6 pieces, 2x4, 12 ft. long; the material will cost $12 to $15. No floor is put in, but sand or saw-dust bedding part, and ditch all round, to keep water out. By fastening handles at each corner it can be moved by four men, and in that way placed on fresh ground every few weeks. It is larger than the Butler County pen, and better for the reason that it is larger, and permits a person to enter and stand up straight, and have a stove in cold weather, if desired. It is better, although a little more expensive, to have a part of the front glass, as shown in illustration. This kind of pen is the best and cheapest for the breeder and placed upon lots laid out as per diagram in chapter on farms, make the best possible arrangement, all things considered, for breeding swine.

Here is another hog-house, taken from the *American Agriculturist*, which has many good features. It is described as follows:

The piggery, shown in figures 1 to 6, is fourteen by forty feet; corner posts, fourteen feet; height of first story, eight and one-half feet: second story, five feet from floor to top of wall-plate. The first floor has two thicknesses of inch boards, a foot wide, the lower boards running

lengthwise of the building and the upper ones crosswise. The walls also, are two layers of similar boards, the outside ones perpendicular, and battened with inch strips three inches wide. Second story floor is one thickness of narrow inch boards, tongued and grooved. Stairs to second story three feet wide. All the doors are battened. One twelve-light window in gable end, and one in feed room. Each pen has a window opposite it, across feeding hall (shown in figs. 1 and 3) and a sliding sash at the rear (seen in fig. 3). Between each pen and its yard is a batten sliding door, two and a half feet wide, four feet high; and at the outside of each yard is a door three by six feet, either on hinges or to slide. Height of yard fence, six feet. From each yard to its pen is an incline of two-inch plank, with inch strips, three inches wide, well nailed on to prevent pigs from slipping.



No. 54 Fig. 1.—SIDE OF PIGGERY.

Fig. 2.—END OF PIGGERY. No. 55

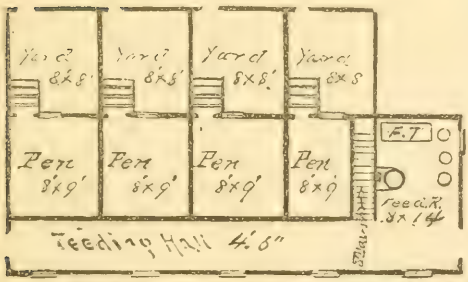


Fig. 3.—GROUND PLAN OF PIGGERY. No 57

The feed troughs run across at the front. The partitions, five feet high between the pens and over or in front of the troughs, swing (as seen in fig. 5). The hinged stick, A, (fig. 6), props the swinging partition back, when cleaning out trough and supplying feed (slops) as seen in fig. 4; and it falls back on removing the stick (fig. 4). However, the partitions dividing the pens and yards can be made either stationery or to swing, the latter being preferable, as this will allow all the pens to be thrown into one large one,

and the same of the yards. The feed room is provided with a brick chimney, an iron kettle, and a large wooden box for mixing feed, slop-barrels, etc. The entry doors to this are made wide, to admit a slop-barrel on a wheelbarrow. If the yards are planked on a level with the floors the incline can be dispensed with.

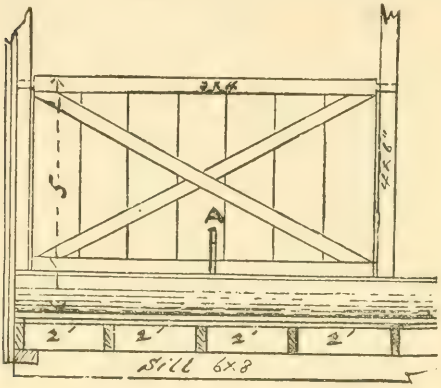


Fig. 6.—FRONT OF TROUGH. No. 56

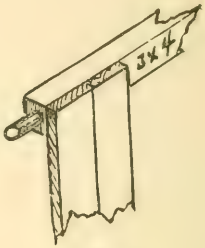


Fig. 5.

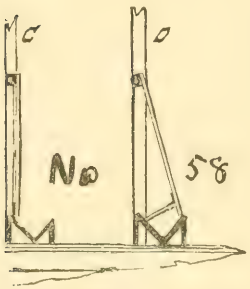


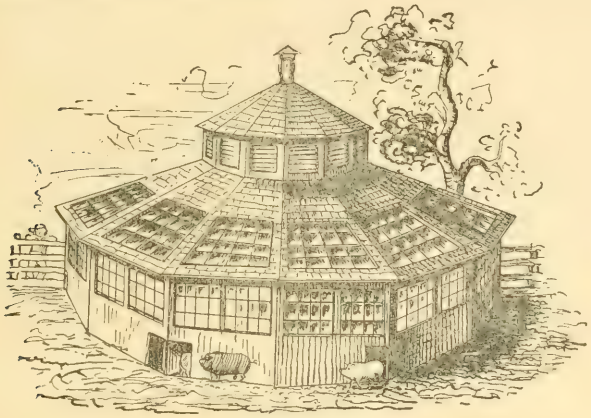
Fig. 4. SECTION OF TROUGH.

MATERIAL AND COST.

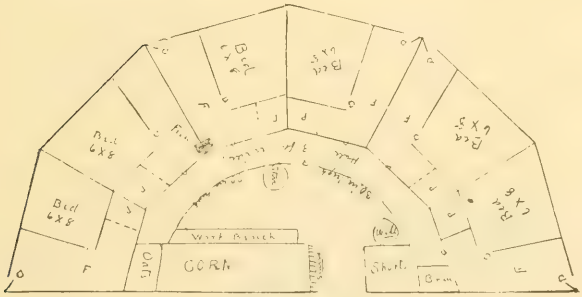
Timber: Sills, 6 by 8 inch, four, two 40 feet long (or shorter ones spliced), and two 14 feet=432 feet. Four corner posts, 4 by 4 inch., 14 feet long=75 feet. Plates, 3 by 4 inch., two 40 feet (or shorter ones spliced) and two 14 feet long=108 feet. Five pieces for swinging partition posts, 4 by 6 inch., 8 feet long=80 feet. Ten posts for outside partition walls, 4 by 4 inch., 8 feet long=107 feet. Fourteen fence posts, 4 by 6 inch., 8 feet long=224 feet. Forty-two floor joists, 2 by 8 inch., 14 feet long=882 feet. Forty-two rafters, 2 by 4 inch., 11 feet long=308 feet. Twenty-one pieces, 2 by 4 inch., 8 feet lonfi=112 feet. Eight pieces, 4 by 6 inch., 14 feet long, for joist beams=224 feet. Twenty-seven pieces for ledgers and frame rails, 2 by 4 inch., 16 feet long=238 feet.—Total, framing timber, 2,848 feet (board measure) @ $14 per 1,000 feet, $39.87. Rough boarding, 1 inch thick; 968 feet sheathing; 1,120 feet flooring (1 foot wide, 14 feet long); 3,220 feet weather-boarding; 1,812 feet for swinging partitions, fence, troughs, etc.; 124 batten pieces, 1 by 3 inch, 14 feet long (434 feet); 76 pieces, 3 inch. wide, 8 feet long, for braces for swing partitions (203 feet). Total, 7,257 feet @ $17 per

1,000 feet, $123.34. 800 feet dressed lumber, 1 by 4 or 6 inches, tongued and grooved, for doors and second floor, @ $20 per 1,000, $16. 5,000 shingles, @ $3.90 per 1,000, $19.50. 2 windows, 12-light, 8 by 10 inch., $3.00. 10 windows, 6-lights, 8 by 10 inch, (sliding sash), $7.50. 3 door frames, 3 feet by 6 feet 8 inch., $5.25. Bricks, for 8 by 8 inch flue, etc., $26.30. Hardware, sash hinges, nails, etc., $5.00. Materials for, and painting, $10.00. Carpenter work $110.48. Total cost of piggery, $366.24.

And here is another hog house—a new one—and designed expressly



BOSS PIGGERY.



GROUND PLAN.

for this work by the author, and submitted for the benefit of the readers of this book.

The last plan is shown by two illustrations, a rear or south view in perspective. And the ground plan of the building.

If a large hog house or one containing several pens is desired, I think this one the best. It contains pens, cribs, shorts, oat and bran bins,

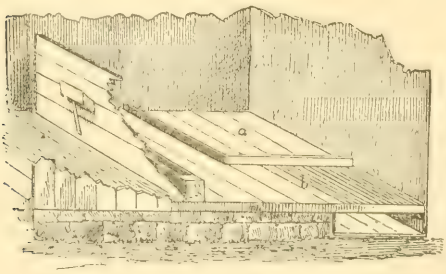
work-bench, well, tank, stove, hall and all conveniences of arrangement. It is well lighted and ventilated, and affords an opportunity for large open lots, owing to the shape of the building, the further the lots extend back from the building, the larger they become. The ground plan shows six pens, their location, hall-way, location of bins, crib, work-bench, well, stove, and stairway at end of crib. It also shows the shape and division of the pens. The bed in each pen is raised about three inches higher than the rest of the pen; this keeps the bedding dry, and prevents mussing up, as is frequently the case where all are on a level. The small appartments marked P., are for feeding pigs separate from the sow. The partition between the pens, and between pens and hall are all forty inches high, while beds are separated by a twelve inch board, and an opening left at the corner for entrance. The tank is put on the second floor just over the stove, near the center of the inside of hall-way. Hogs may be turned from one pen to another by running them into the hall and then to any pen desired. The work-bench by the crib is for making boxes. The two story part is larger than represented in the cut and should extend clear to the glass part of the roof; this gives some room above for bedding, boxes, tank, and for crib and bins to extend up into the second story. The back part of pens can be made four or six feet high, just as fancy may dictate.

The building is 48 feet across the straight side, and 24 feet deep, and can be built for $250 or $350, according to finish.

BILL OF MATERIALS.

10 pieces, 6x4, 12 feet long; 6 pieces, 6x8, 7 ft.; 5 pieces, 6x8, 10 ft.; 36 pieces, 2x8, 12 ft.; 7 pieces, 4x4, 12 ft.; 10 pieces, 4x4, 14 ft.; 12 pieces, 2x4, 14 ft.; 35 pieces, 2x4, 16 ft.; 3,000 shingles; 1080 ft., flooring; 1,000 ft., sheeting; doors, windows, sash, etc., $75 to $100.

Here is an idea for floor of pig pens that looks like a good thing. We are indebted to the *American Agriculturist* for the illustration and description. This kind of floor can be put in any of the foregoing plans of hog houses.

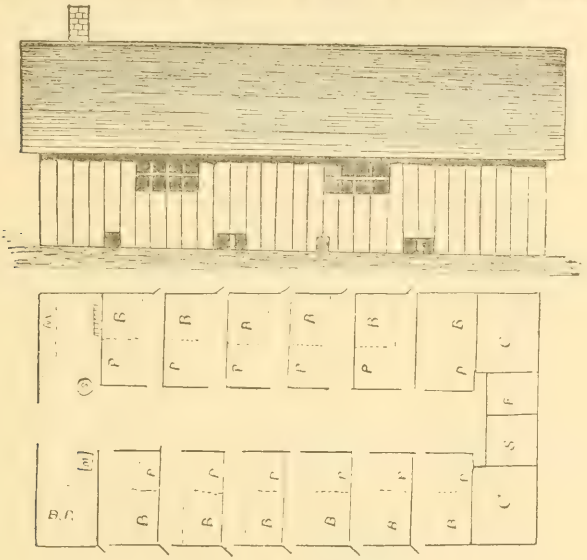


PIG PEN WITH SLATTED FLOOR.

SLATTED FLOORS.

A pig pen, as usually constructed, must be cleaned out every few days, and those who have done the work know how disagreeable it is. By the use of a slatted floor much of the objection to cleaning out the pen is avoided. As in the cut, one corner of the pen, *a*, is protected by two strips of boards four inches wide; in this corner is placed the bed-

ding; in the corner *b*, is placed a slatted floor. It should cover a surface of four feet each way, and is made by setting inch-boards upon edge, in a parallel line, and three-quarters of an inch apart. The strips should be four inches in width, and kept the proper distance apart by suitable blocks of wood. Immediately below the slatted floor is placed a platform of plank, upon which both the solids and liquids fall. This platform should rest upon a firm foundation, placed at least one foot below the slatted floor, to admit of easy cleaning. By the use of this open floor, pens need not be cleaned more than once in three or four weeks. Most pens now in use can be easily changed to conform to this plan.

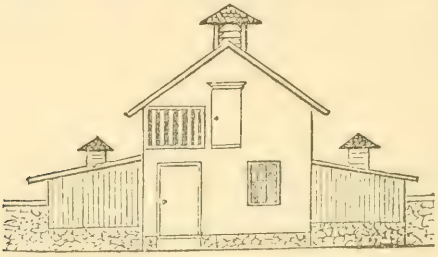


ANOTHER HOG HOUSE.

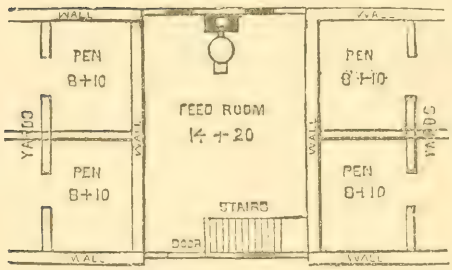
The above plan is a new one of a cheap large house. It contains twelve pens 8x16 ft., boar pen 8x10 ft., a well, work-bench, stove, stairway, hall, four foot window, and at north end, cribs and bins, two corn cribs 8x10, and shorts and bran bins each 6x8 ft. The doors in the pens along the hall are four feet wide, so that when open it closes up the hall, making it easy to transfer pigs or hogs from one pen to another without going outside of the building. The building is 36x65 feet, at the sides it is six feet high, roof one-fourth pitch. It is seven feet high from first floor to ceiling; the second floor is 24x65, and makes room for boxes, bedding, etc. At a little more expense the building may be higher and more room in second story, and windows can be put at every pen. As planned it will cost $250 to $300, and if dirt floors be used, can be made for $150, where lumber is cheap. The following is bill of

lumber: 800 feet, sills, 6x8; 1,456 feet, 2x8, 18 feet, long; 96 feet, 4x4, 12 feet, long; 475 feet, 2x4, 14 feet, long; 4,000 feet, flooring; 1,500 feet, siding; 66 rafters, 2x4, 24 feet, long; 2,000 feet, sheeting; 2,400 shingles; 1,000 feet, plank, 1 inch, for partitions; 1 keg spikes; 1 keg 8-penny nails; 50 lbs., shingle-nails; windows, etc., $25.

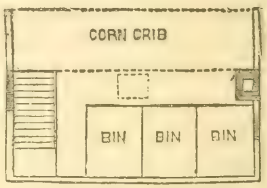
The following is another plan taken from the *American Agriculturist*.



—PIG STY WITH CORN LOFT.



—GROUND PLAN OF STY.



—PLAN OF CORN LOFT.

The ground plan explains itself, also that of the smaller loft. The main building is two stories high, and the lower floor is used as a feed floor, while the pens are in the one story portion on either side.

The larger houses containing several pens under one roof are not recommended unless there be a lack of ground room. The objections to the larger houses are, among others, that they are more difficult to keep clean and healthful. 2d. In the breeding season if the occupants of one pen become sick or restless, all are more or less disturbed. If one sow is vicious, nervous or restless, the others will be likely to be more or less affected. If one sow by accident or design hurts or cripples a pig so as to make it squeal, it excites all the sows. If you go into the house to give one attention, the others are all up and expecting something. The absolute quiet necessary to successful farrowing, is impossible when several sows are kept in the same building. Sows that are suckling, must and should have more feed than those that are still carrying their young, and if they are in adjoining pens, the full feed of the one, annoys and makes the scantily fed one nervous and irritable.

These are the principal objections to the large houses. The things in their favor are appearance and labor saving. One nice large house is much more impressive and the convenience and labor in caring for a number of sows and pigs is much less than when they are scattered about over a large territory. Lastly, when there is a lack of ground room the large building permit more hogs to be kept on a given space of ground. To obviate in some, measure the difficulties of both systems and at the same time combine as many of their excellences, the plan of dividing up a plat of land into lots with a narrow street dividing the two sections is suggested. This plan is represented by the diagram in chapter on farms. It puts the hogs sufficiently near to each other to permit a systematic arrangement for feed and care and yet remote enough to prevent their annoying one another.

The pens or house may be expensive or cheap, as the fancy of the owner may incline.

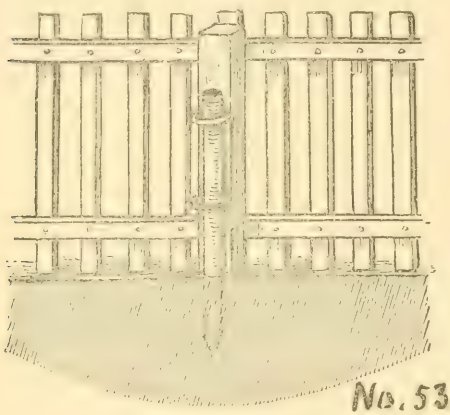
A very good and substantial shelter may be constructed as follows: Set four forks in the ground, the lower side four feet high, and the upper or higher side, six feet, place poles or rails in the forks reaching from one to the other, and on top of them, other poles or rails, say 18 inches to two feet apart, and on top of the poles make a covering of straw of sufficient depth to turn the water, the straw can be made secure by weighting it down with pieces of wood, or by a sharp stick driven in at the top, in the same manner as tops of hay stacks are secured. The highest part should face the south, and the north, east and west boarded up, or if you prefer, a double rail or pole pen around the three sides with straw between. This makes a cheap and good shelter that will last several years. If preferred, the south side can be closed by a sliding gate, but ordinarily nothing will be needed on the south side. A very cheap temporary shed may be made by taking five rails or poles, tying them at the top and spread them out at the bottom and covering the outside and top first with corn stalks, and then straw, leaving an opening at the south, making a wigwam shape shelter.

If you have a high, steep bluff, holes may be dug into the side, say eight by ten feet, with floor or bottom slanting out. This makes a permanent and one of the best of shelters; it is always warm in winter and cool in summer. Ingenuity will suggest many others. The principal things to be always kept in view are health and convenience at the least expense.

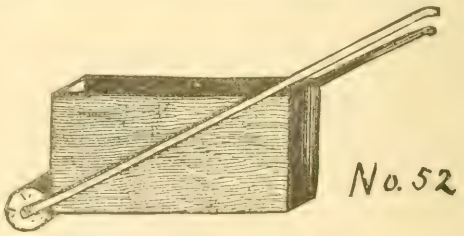
Floors of sleeping apartments are best made of sand where ground is high and dry. Concrete makes a good floor for feeding, and stone, plank or brick can be used, but when used in sleeping apartments should be covered with sand, saw dust, fine cut straw, or corn fodder.

CONVENIENCES.

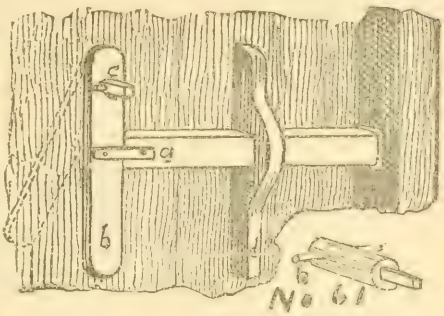
We here give the description and illustrations of some conveniences that are handy about the farm. The first is a good, substantial portable fence, which can readily be moved from place to place for temporary pens. It will be found practical and satisfactory. Cut the posts the same length as the pickets, and to the inner side of each attach two strong iron hoops bent into a semi-circle, one near the bottom, and the other half way up. Through these hoops drive stakes fitted to fill them closely, with sharpened points for entering the ground easily. When removing the fence the posts can be slipped off. A truck for removing manure or wheeling food can be easily constructed, and is a very handy thing to have about. We give an illustration and discription, so that one can be easily constructed. Select a grocery or ordinary goods box of convenient size, and take an old wheelbass, or two small wheels with a homemade axle, cut so as to have roller half inch shorter than width of box. The roller or moving part is held in place by two strips of strong wood or part of hoop-pole as shown. It is simple, easily of construction, and cheap.



PORTABLE FENCE.



A wooden bolt,—A,—slides freely through the notch in D, and into a notch in the upright post, behind the weather-boarding which holds it. On the other end a short iron strap is screwed on firmly, with its end held by a screw on which it turns, to the lever, B. This lever, B, is keyed with a nail over C, which is the squared end of the handle, H, that comes through the board from the outside of the door. The latch, A, is drawn out of its socket by seizing the lower end of B on the inside, or turning H on the outside. The wood for all will need to be tough; the size of the parts to be proportioned to the size of the door.



LATCH FOR DOOR ON HINGES.

The following illustration presents a durable pig-trough, and it can be used in yard or pen. The sides slope inward, and it is made of cast iron. It is six inches deep, twenty-eight inches across the top, and has an acorn shaped center projection, marked "A," upon which the swill is poured to distribute it evenly in the trough. The swill is guided by the funnel shaped collar, B. This is also of cast iron, twelve inches across at top, and three and one-half inches at the bottom. The collar is supported by three-eights inch iron rods riveted to the collar and trough; these not only support the collar but keeps the pigs from crowding.

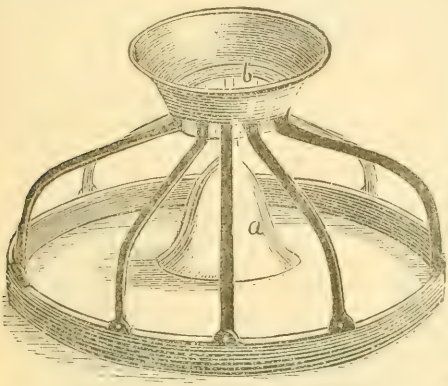


Fig. 1.—A CANADIAN PIG TROUGH.

The next one is called the Kirby Homestead Trough (Fig. 2). It is of cast iron, 4 feet long on top, and 3 feet at bottom, 12 inches wide and 6 inches deep. The sloping of sides and ends so graduated that there are no sharp corners presented. This prevents pressure from freezing, and consequently

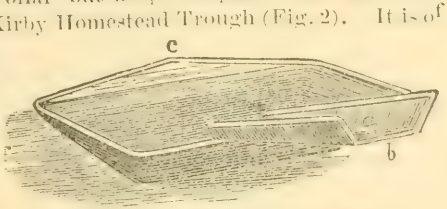
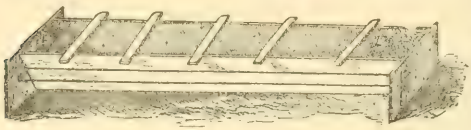


Fig. 2.—IRON TROUGH WITH SPOUT.

no cracking by having water frozen in it. The spout marked "A" is cast with the trough, and is 17 inches long, and 14 inches wide at the mouth, "C," narrowing to 7 inches at the trough. Opposite the spout is a rise of two inches at "C" to prevent overflow. A flange or projection can be cast at each corner, with holes, so it can be nailed to the floor.

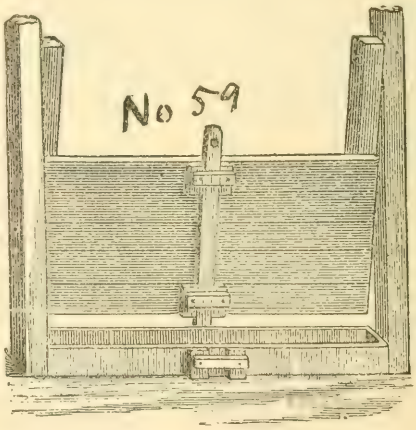
Figure 3 is a small iron pan or trough, 3 feet or more long, 1 foot wide, and 2 or 3 inches deep; or, if preferred, it need not be over 6 inches wide. These iron troughs are easily kept clean and sweet, and if handled with reasonable care, will last a lifetime. Here is a cheap, strong trough, made by nailing the edges of two long boards for sides together, and then putting on the ends, as troughs are frequently made. Three iron rods on each side run from end to end, and are fastened with nuts on ends. The rods hold the trough together and make it very strong. The slats across the top are to prevent the pigs from crowding each other, and to keep them from lying down in the trough.

Fig. 3.—ANOTHER IRON TROUGH.



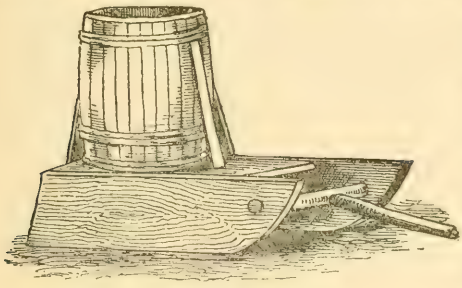
A CHEAP AND STRONG TROUGH.

Here is another trough, and the drawing explains itself. The partition in the pen is suspended by bolts at the top, and secured on either side by the sliding bolt. When the feeder desires to clean out the trough the swinging partition is pushed and bolt slipped down to hold it in place, when the trough can be cleaned out at leisure and the feed put in; then the bolt is raised and the partition swings back and is fastened upon the outside, and the pigs proceed to fill up.

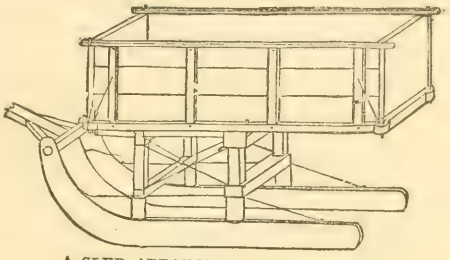


The cuts on the following page show the construction of a barrel and sled, and a sled arranged for dumping. The former may be easily made

from the illustration. The dumping sled is exceedingly handy for hauling out corn to fattening hogs, hauling manure, and many other farm uses. It consists of an ordinary "bob-sled" with a cart-bed fastened on hinges in the middle, and so fastened by hook or other means at front end, as to admit of loosening it and tipping bed as in coal-carts and horse-carts. The cut so fully illustrates its construction that but little discription is needed. It can be used especially in winter for many purposes, such as hauling corn for fattening hogs, gravel, sand, and earth to fill holes or banking up around pens or buildings and hauling out manure; and in summer it will be found to drag easily on grass, and is very convenient. In hog-killing it can be used as a platform, and dumping one at that, so that piggy can be drawn from the scalding barrel in the bed, and then the front end brought down, or in hauling hogs from pen, after killing, to place for dressing. When used for this purpose loosen the front end so that back end will touch the ground; the dead hog can be easily pulled in, and then the bed pulled down and fastened at the front with less labor than would be required to lift the hog upon a sled or wagon. Many other uses will suggest themselves to the thoughtful farmer.

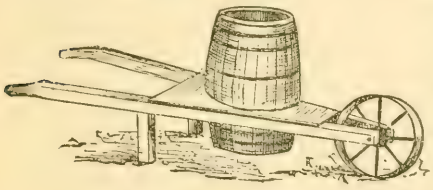


A BARREL AND SLED.



A SLED ARRANGED FOR DUMPING.

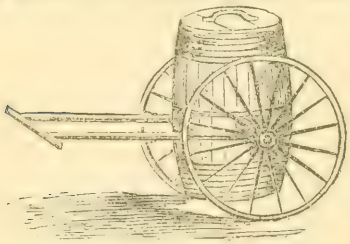
We next present a convenient swill barrow. It can be made of an old wheel-barrow, or any old wheel taken from some discarded machine, and by attaching handles and fastening a flour or other barrel, can be used for a variety of purposes, such as wheeling swill, water, meal, shorts, oats, etc. It is an inexpen-



CONVENIENT SWILL BARROW.

sive and easily constructed implement, and is sufficiently explained by the illustration.

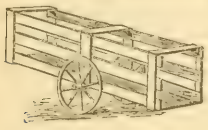
We also present another, a little more expensive, but much better one, and its construction and use are suggested by the picture. This, too, can be a home-made article. Take two old wheels from on old corn cultivator, wheat-drill, hay-rake, old buggy, or spring-wagon, or if preferred, get new wheels. A coal-oil, old pork, whisky or vinegar barrel will do for the barrel. Dress out a stick of rough wood for an axletree, about 2 inches square, and make an axle-arm on each end of it to fit the wheels. The length of the main part of the axle-tree, between the wheels, should be about 30 inches. Make a square mortise through two opposite sides of the barrel, just large enough to receive the axletree. Let the work be done neatly, so as to secure a good fit, and calk the cracks with tow, or with the strands of a rope picked to pieces. Two staight sticks for thills, with a cross-piece connecting the forward ends, are bolted to the axle-tree with small carriage bolts. The axle-tree should pass through the barrel, a little below the bilge, provided the wheels are high enough to swing it clear from the ground; or the barrel can be secured by making the axle of wood or iron and passing around the outside of the barrel and fastened to it by screws or bolts. Other means of attachment may suggest themselves to the person constructing the cart. The advantages of such a swill-barrel will be readily appreciated by every one who desires to keep the offensive odor, which arises from the piggery, at a distance from the dwelling-house. The barrel, wheeled to the door of the kitchen, may receive the swill, and can then be trundled back to the piggery. Thus we dispense with all the disagreeable handling and spilling of swill, unavoidable when a swill-barrel is stationary, and the swill is carried in pails from the kitchen to the sty. Another very important consideration is, that if an inclined plane be made for the wheels to run upon, the contents of the barrel may be poured directly into another barrel, or into the feeding trough, by simply elevating the shafts so as to turn the barrel over backwards. A barrel may be supported on wheels in this manner, for the purpose of carrying water to stock of any kind, or for any other purpose where it is usual to carry water, liquid manure, etc., in pails. A lid should fit at the top of the barrel closely, to keep the liquid from slopping over.



PORTABLE SWILL-BARREL.

A chute, for loading hogs in wagons or on cars, is always an important helper on the farm, and we here present our readers with two useful ones. The first is one described by Prof. Bonham, and illustrated in the

Breeders' Gazette. It is a chute on wheels and is fully explained by the following cut and description: "The cut will give a general idea of its construction. It is eleven feet long, two feet wide in the clear, and the sides are two feet six inches high. There are two sills, made of two-by-four scantling, with tenant one inch by four on each end, which enter mortises in side posts one by six, and are fastened with three-quarter inch draw pins. After these are made put in draw pins and tighten them up; then put in the bottom side pieces, which are boards one foot wide and twelve feet long; then the two bottom boards, one foot wide and eleven feet long. If the bottom sills have been made two feet two inches between shoulders of tenants the bottom boards and side boards will fit closely and leave no cracks, and help to stiffen the sides. Now put on two six-inch fencing boards twelve feet long, leaving cracks three inches wide, and you have the sides two feet six inches high. Now place one end of this chute in the bottom of your wagon which you will use for hauling hogs in, the other end resting on the ground. You can now drop a plumb-line and mark and saw off the ends of the side boards, so that the ends of the chute will be perpendicular.



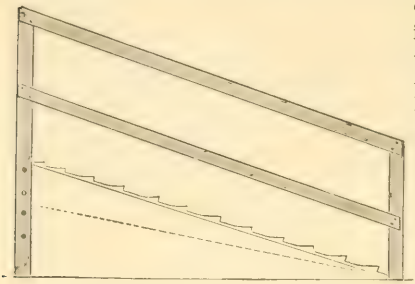
PORTABLE CHUTE.

The wheels shown in the cut can now be placed so the axle furnishes a support to the bottom of the chute. The bottom will be stiffer if you have placed the sills and side posts or stays one foot from each end. For wheels we have a castoff pair from an old buggy, such as can be had at any wagon or blacksmith shop for a trifle. The iron axle can be cut in the middle, so as to be made two feet six inches between the shoulders of the spindles. Now cut a slot in each of the two pieces of two-by-four scantling three feet long, and let the slots be wide enough to fit closely over the square of the iron axle. It is usually about an inch and a quarter. Let these pieces be put on the outside of the chute, the axle in the slots, and when the axle is adjusted, so as to touch firmly the bottom of the chute, nail these two slotted pieces to the sides of the chute, and you have a hog chute which can be wheeled from place to place with great ease. It will be found more convenient than a permanent chute, since with it hogs or sows can be loaded directly from their accustomed pen."

In many places the wagon bed used is too shallow for hauling hogs. We have found a bed two feet six inches deep entirely satisfactory. A cheap rack is easily made to put on top of a common box bed, as seen on many farms. It makes a handy arrangement for hauling hogs, calves, sheep, stove wood, leaves, and other light, bulky material.

The following movable hog chute is taken from the *Swine Breeders' Journal.* It is, considering its simplicity, the best chute we know of. It is made as follows: "You will see that it is like the common chute used, except it has a movable floor. The floor has a cleat nailed onto

the lower side at lower end and rests against a strip nailed across the frame; this makes a hinge, strong and durable and not likely to get out of order. The top end is held in place by two pins and when used for loading wagons, these pins can be drawn out, letting the floor down on the wide board nailed across the frame, which is also of sufficient height for loading sleds and also gives strength to the frame in the way of bracing. It is made of fencing and can be made in one hour, and used in connection with two panels of fence hinged together."



CLEMENT'S HOG CHUTE.

The following cheap and substantial fences, also the descriptions, are taken from the same valuable journal: "Figure 1 is constructed as follows: Use 16 feet fencing; set post over sixteen feet, two feet in the ground and 4½ feet out, using posts 6½ feet long. The center post is 18 inches in the ground and 26 inches out. Lower board is three inches above ground; second, 4½ inches above lower board. Lower wire should be what is called hog or thick set barb wire, barbs about three inches apart. Place this wire about three inches above the second. One more wire, 10 inches above, completes the hog fence. This wire need not be thick set. Now if you want a pig tight, bull strong, horse high fence put on another wire 11 inches above. If good material is used and the work well done, we have the best and most durable fence possible to make. I suggest that as the best is the cheapest, used galvanized wire." "When through with the fence (shown in Fig 2) it can be stacked up in a shed and left until necessity compels its use again. The fence is made in panels of three ft. boards, 6 in. wide. Nail on the uprights which are 30 inches long, one in the middle and one 2 ft. from each end,

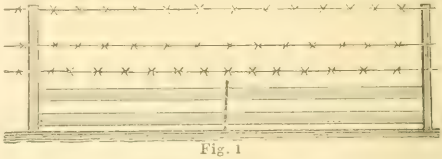


Fig. 1

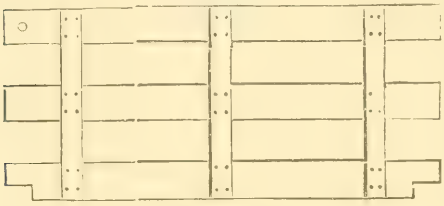
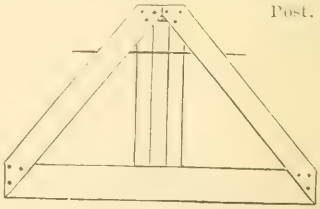
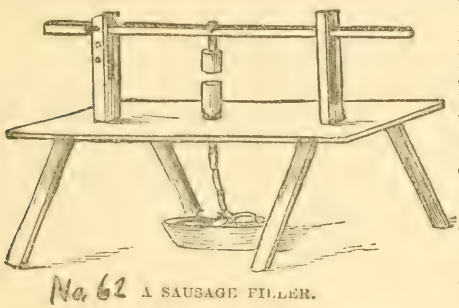


Fig. 2.



selecting the longest of the three boards for the bottom. Make the space between the bottom and second board, 5 inches; between the second and third, 5 inches. Cut out a notch 2 inches deep and 4 inches long in each end of the bottom of the bottom board. If your ground is rolling these notches will have to be longer. Bore a three $\frac{3}{4}$ inch hole in the centre of the top board four inches from each end. These are to hold the pins which are made of hickory or oak and which hold the fence together. The bottom of the post is made of 6 inch fencing, 4 feet long. Uprights, 4 inch fencing, 3 feet long; braces of 4 inch fencing. The uprights, which are spaced $2\frac{1}{2}$ inches, are nailed to one side of the top and bottom piece and the braces on the other side. Use tenpenny wrought nails for all the work. When setting up the fence, use only one pin to each post."

We submit below the illustration and description of a sausage-filler, which will be found very easy of construction: An inch thick pine board, a foot wide and $4\frac{1}{4}$ feet long, is fitted with 4 legs, $2\frac{1}{2}$ feet long, notched into its edges, with the feet spread outwards to give firmness. Two oak standards, 18 inches high, are set 34 inches apart, with a slot down the middle of each for the admission of an oak lever, 8 feet long. The upright has three or four holes above each other for the lever-pin, as shown in the cut. The tin filler is set into the bench nearer the left upright, and projects below for receiving the skins. Above the filler is a follower fitting into it, and its top working very loosely in the lever, to allow full play as it moves up and down.



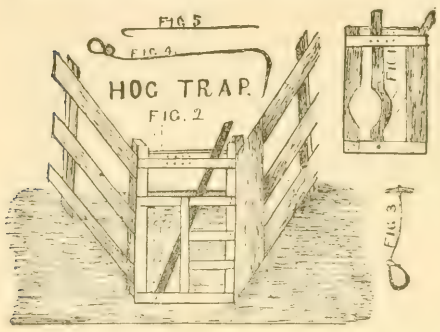
No. 62 A SAUSAGE FILLER.

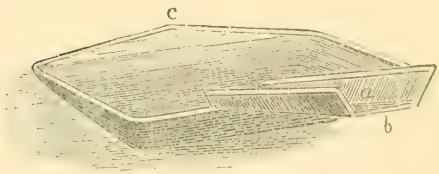
Grain-bins, wells, corn-cribs and slop-barrels should always be located as near and convenient to the feeding pens as possible. Bins for small grain, bran, shorts, meal, etc., should be constructed with a slanting floor, the slope being toward the opening. This will crowd the feed down to the place of taking out, and save time, trouble and work.

All tools used should always have a place, and be kept in place when not in use. If a board on pens or fence becomes loose, or off, put it on or fasten it at once. Delays are dangerous.

The illustrations given on the next page show several kinds of hog-traps. Figure 2, in a great measure, explains itself. The hog is driven in from the rear, and the person who operates the trap, stands beside the wide board, and as the hog's head passes through the opening, the top of the lever is pushed forward and secured by an iron

pin passing through the holes in the top bars, in small dot, for holes. The sides of the trap can be made of ordinary fencing lumber, and the catch bar should be 2 by 3, or 2 by 4 scantling. Figure 1 is a head-piece that can be used in Figure 2, in place of the one shown. In Figure 1 you will notice the side of the catch or catch bar have sides hollowed out to fit neck of the hog. It is a better, but more difficult to construct. In Figure 1, the trap is shown closed; while in Figure 2 the trap is open. The dotted lines in each show the position of trap bar as closed in Figure 2, and open in Figure 1. Figures 3 and 4 show a rope with running noose, and Figure 5 is used in connection with both 3 and 4, for the purpose of pushing the open noose in the mouth of the hog. These rope traps are designed to catch the hog by the upper jaw; as soon as a hog feels the pressure of the rope, he at once pulls back, and by wrapping the other end around a post or tree, you hold him fast. The loop in Figure 3 is all made of rope; in Figure 4 the rope passes through an iron ring, which is preferable, because it works easier in catching and letting go.





IRON TROUGH WITH SPOUT.

PRINCIPLES OF BREEDING.

The principles of breeding are as old and fixed as nature. They are unchanged and unchangeable. Many of them have been discovered, or at least partially so, but old nature has so far concealed others, and seems likely to until the end of time. We know certain things as facts, but why they are so, we do not know. We know that by the copulation of animals, at certain periods,, new animals are produced, and at other times and seasons, copulation by the same animals produces nothing. These are facts all have observed. Why they are so, *no fellow has found out.* There are many others of like and different character that we are ignorant of. One of the things we think we know is that like, under the same circumstances, produces like; or to put it in a little different shape, we know that the young and new born animal *is like its parents or some of their ancestors.*

This chapter will be principally directed to what is believed to be known, with an occasional mention of the unknown principles of breeding Two terms will be used in this discussion, which are names for the two principles of breeding which we think we know. The first one is heredity, and it is that principle which results in perpetuating a similarity or uniformity in a species, and makes every individual the sum, essence or aggregation of all that precedes it, and upon which is built the saying, "like produces like." It is the conservative force that loves the old or permanent order of things and abhors changes and variations. Opposed to this conservative force, is a radical one, usually called evolution, which develops and unfolds some hidden dormant faculty or power, by change of situation, condition and selection. It is that progressive principle that adapts the animal to change of surroundings. These two forces are always contending with each other and yet working together. Heredity resists changes until evolution has held its own for a few generations, when heredity, reconciled to the new order of things, steps in, and by the aid of its powerful force, holds the new order permanently, thereby establishing a new, fixed type. Evolution is the pioneer that goes into new fields and unfolds and develops, while heredity is the conservator which follows, reluctantly, it

is true, but follows, and holds firmly the position evolution has won.

All wild animals, in a state of nature, are the Simon pure examples of heredity. They have for ages been of the same form, pattern, color and disposition. The tiger of to-day has the same stripes as of hundreds of years ago. The leopard has not changed a spot nor abated one whit of its cunning. The wild hog is the same fierce and fleet animal that he was when first known. It is true that occasionally evolution has drawn out what is known as a sport, such as a white deer or squirrel, but not having the hand of man to aid in selection, in a few generations or perhaps in one generation it is merged in the current of heredity, and ceases to exist as a white or different colored animal. The principle then called heredity, by its adherence to the old order of things, is of great importance in holding any new or advanced position which evolution, guided and assisted by man, may attain.

We may safely say that the only strictly pure, thorough-bred animals are the wild ones, and domestic animals are only relatively so. The wild animals always produce their kind unerringly, while any of the domestic breeds only do so imperfectly and under like circumstances and conditions, and then must be guided and directed by man, without such direction, the domestic horse, cow, or hog will each gradually go back to, or nearly approach, the wild ancestor. At first blush this may seem at variance with what has been heretofore said. It is one of the peculiarities of heredity, however, that it may be temporarily overrun by others of more present power, but it is only vanquished and not slain or exterminated; when, therefore, the superior force begins to fail from lack of culture or attention, the hidden or partially smothered one, aided by neglect and want of sustenance, or some change of condition, or new element revived, it once more regains supremacy and drifts the animal back to the wild form.

As commonly understood the words, thorough-bred or pure-bred, as applied to different breeds and races of domestic animals, mean that sameness of type that transmits itself uniformily to its progeny. This brings us face to face with the old question of "in-and-in" breeding. It is a question that must be met, and we do not shrink from the task, but will treat of it in a subsequent and separate chapter.

Before proceeding further, it may be well to define the word *Breed*. Webster defines it as follows: "1st. A race or progeny from the same parents. 2d. A cast; a kind; a race of men or other animals which have an alliance by nativity, or some distinctive qualities in common." We submit the following: A family group, or class of animals, which uniformly possess and transmit characteristics, qualities and peculiarities not common to other animals of the same species.

In the formation of a breed, or in perpetuating it, one of the most important principles is a careful, thoughtful, and intelligent selection of animals designed for breeders. This principle is aided and supported

by generous feeding and careful protection In fact the principle of selection would work but slowly, if at all, unless backed by the other two, and all are somewhat modified and controled by changes of climate and habits.

In starting a new breed a definite idea should exist in the mind of the person or persons who are about to make the attempt. Unless such an idea is ever present and adhered to, the selections will not have any intelligent direction, and success can hardly be expected. The same may be said of attempts at improvement and efforts to maintain present perfection. Mixing the blood of animals without any definite aim is easy enough, but to direct such mixing with intelligence is a difficult problem, and requires a thorough knowledge of the principles of breeding together with a high order of intelligence.

In breeding any of the improved breeds of hogs, now existing in the United States, the breeder is aided by having a standard or ideal hog already described by skillful breeders. This obviates the necessity of his creating one. It is true he need not follow such ideal, but may erect one of his own. In any event if he expects success he must have *an ideal, original or borrowed*, and stick to it, and not only have an ideal but must work, intelligently and unceasingly, to bring his stock up to *the ideal*. Theoretically, there is no limit to the number of breeds that may be produced, as minor changes can readily be produced, but practically the work is confined to marked and important differences.

In commencing a breed we have, as will be seen, only probabilities, for so much depends upon the effect of climate and the uncertainty of the combinations, but after the breed becomes established and firmly fixed, then we may figure upon a particular form with reasonable certainty, if we follow the principles of breeding with judgment and skill.

The first and one of the most important steps to be taken, is a careful selection of animals having in common the desired peculiarities. Couple such together, and as the breed begins to take shape and form, as a class, select from the progeny in like manner those having the nearest approach to the ideal, and if one should have some especially weak points or marked deficiency, select for its mating one unusually strong in same points, and if possible one whose ancestors for several generations have exhibited a like strength. If the point to be corrected be one of muscle, use at the same time such food as especially develops muscle, and direct sufficient exercise to aid in the development of the parts. To illustrate: If it be a flat neck or small back, do not put a ring in the nose, but put the hog where he can and will root a great deal, and if necessary fix his food where rooting will be necessary to get it. There is no exercise a hog takes that develops the muscles of the neck and back like vigorous rooting.

If the ear is too large and lays too close to the head, select one as a mate that has ears nearly erect, or if you have not such an opposite,

breed so that the pigs will come in December and January, when the weather is cold, as pigs coming at that season of the year have smaller ears, and often stand upright or nearly so for a time, and finally break at the tip. The reason for this effect of the cold weather is not clear to me, but it is claimed by some, with a show of plausibility, that it is because the cold weather impedes the circulation of blood in the ear and thereby checks the growth. Whatever the philosophy may be, the fact is an established one.

If the defect is in soft bones and feet, correct by selecting a mate of opposite character, and use feed that contains the most bone material, such as milk, oats, bran, and ground bone. In short, aid your selections by strengthening them with proper food and exercise.

The better and more rapid process of development is to have both the animals coupled possess in as great degree as can be obtained, the desired points in common, as mixed form, currents and peculiarities of blood are less liable to harmonize, and frequently the antagonism tends to allow the old force of heredity to drive back to some poor ancestor.

By selecting animals for coupling that have a uniformity of characteristics you concentrate the effects of evolution, and approach heredity in those points; whereas, if extremes are mated there is a struggle for supremacy between the desirable and the undesirable that is likely to go wrong unless the good is backed by a long line of similarly constituted animals.

The better way is to select only uniformly good and discard the bad tendencies. The downward road is much the easier traveled and it requires constant care, skill and judgment to keep in the path of progress. It is better to have a few good ones than to risk desirable qualities and increased numbers.

Poor material put in a building will sooner or later give way and ruin follow, and the same result follows in breeding, if poor blood is used.

Defects may in time be bred out. They do not go voluntarily nor yield easily. They can be only overcome by repeated and persistent fighting. It is better to select the best and not waste money or time in attacking deformities, and when you have thus selected, feed generously of the best feed, carefully shelter and protect from the inclemencies of the weather, and the road is pleasant, and progress rapid.

Plans and the knowledge of breeding intelligently will come step by step, and many overgrown conceits, born of tradition and ignorance, will collapse when weighed in the scale of common sense

It is a general rule that coupling two inferior animals together will not produce a superior one. The stream does not rise higher than its source. There is no superior merit without intelligent effort and then it is the result of hereditary tendencies, carefully directed. All alleged happy accidents, if carefully studied, will be found tracing back to some superior ancestor. The accident may be only one pig in a litter,

a fellow that stands out from among his brethren, yet he may be unusually strong in transmitting his characteristics, because the good of some remote ancestor seems to have concentrated in him, but usually those animals are the strongest and most potent which come of a uniformly good litter.

Painters mix and know what colors they will get, but with animals of mixed colors the breeder who mixes can not foresee the result. It is one of old nature's secrets that she has not yielded up to prying man. When, however, the color is fixed in a long line of ancestors it is stable and certain.

If selection of animals used in coupling is made by selecting such as have like peculiarities, the chances for a reprodution of those peculiarities are twice as great as those when the animals coupled are unlike, and the chances increase in a geometrical ratio in proportion as the number of ancestry increase, having like peculiarities; and on the other hand, if the varied forms exist in the animals coupled, and their ancestors, the chances decrease in the same ratio, as the contending currents are liable to refuse all lines and channels and *take to the woods*.

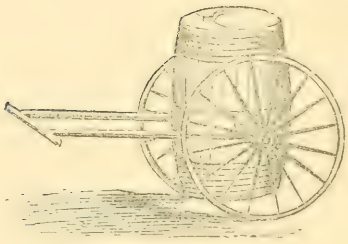
Reproduction of sex is a principle of breeding that has baffled all attempts at control. Many learned men, and close, thoughtful students, have attempted to, and for a time, thought they had unveiled the mystery, but after playing with them for a season, old nature would blast their beautiful theories, and leave man where he was centuries ago, entirely ignorant of the laws governing the control of the production of the sex.

Another principle of breeding is that mature animals produce better offspring than immature ones, or old and infirm ones; and it is also a principle that old animals breed best when coupled with young, vigorous ones. It is better to couple an old sow and young boar, or a young sow with an old boar, than to couple two young ones or two old ones together. But neither course is so certain as the coupling of two middle-aged, vigorous and healthy animals.

Domestic animals, and especially the improved varieties, mature much earlier than wild ones, and as they ripen earlier, they breed earlier. There is also a difference in different breeds, some maturing earlier than others. The sow should not be bred nor the boar allowed to serve until they are eight or ten months old. A breed that can not sustain itself in breeding at that early age ought not to lay claim to early maturity. Much has been written concerning the effect of first impregnations, and many instances have been cited by gentlemen to sustain the position that the first impregnation has more or less influence upon all subsequent progeny of the female. We do not believe it possible that the semen of the male, which is in no way taken into the circulation of the female, can influence after impregnations. At the same time our belief is not evidence, and many instances are cited,

which, if true, apparently support the theory of impressions. Some persons have gone so far as to contend that the first copulation of the male affects all his subsequent copulations; that is, if it is an inferior animal that receives his first embrace, all subsequent progeny partake more or less of the form and appearance of the inferior animal.

This looks to us as though it was a terrible strain on a man's common sense, yet it may be true. It seems to us, however, that the several theories are of little moment to the intelligent and progressive breeder, who always *uses the best.* He will get good ones anyhow who takes none but the best, whether first, last, or each time impressions that govern.



IN-BREEDING AND IN-AND-IN BREEDING.

Breeding animals together, which are closely related, is called in-breeding, or close breeding. When such a course is practiced for several generations, it is called in-and-in breeding. When the animals used are of the same family, but not closely related, it is called line breeding. When the mating is of different families of the same breeding, it is usually termed cross-breeding; although the term cross-breeding, or crossing, is frequently, and we might say, generally used to describe the coupling of different breeds. In what we have to say we shall use the terms entirely, as relating to a breed, and not the crosses of different breeds. We are aware that we are entering a field, where much has, and can be said, and where, if the reader reads only what has been written on either side, he would think there was no doubt as to the views of the champion whose production he has so eagerly devoured. The question, however, has been discussed for a century or more, and the absolute certainty of the benefits of the one or the other course, is still unsettled. Nor are we vain enough to think that we can settle it now; still we have views on the subject, derived from reading, observation and experience. But by way of an introductory, let us say that we usually receive from the writers, accounts of the success of their attempts, while the long list of failures are quietly passed over, and the reading world knows not of the heartaches and periods of anguish which they have produced. This is one of the weaknesses of human nature. It is so much more pleasant to tell of victories than to acknowledge and detail defeats and disasters. But results can only be determined by a knowledge of both the successes and defeats. When this is fully known, possibly the novice may be able to determine the proportion of chances in each line, or system of breeding. Individual instances of success with either system are, to put it mild, far from settling the question. You can doubtless run over in your mind the names of many breeders within your recollection, who have made dismal failures with either system. Such examples afford little information, as there is no evidence that if they had adhered to the other system that they would have succeeded any better than with

the one that brought ruin and disgust. The examples thus called to mind, may be simply illustrations that all raisers are not, in a higher and better sense, breeders. The advocates of cross-breeding say, it is true, that in the formative period of every breed there must of necessity be, in-and-in breeding, but that, as soon as possible, should be abandoned, because it is injurious. Yet the query comes, if it was good while the breed was in its incipiency, why should not the system that has developed, or created, also perpetuate with unerring certainty? One class of breeders maintain that it will, and another go so far as to say that it not only fails to maintain, but will in a short time wholly destroy its own creation. These opposite theories are not new ones; on the contrary, they have existed for years, while the pathways of experience are in many instances adorned with monuments to the one, and strewn with wrecks in proof of the other. It is perhaps unfortunate that all of our domestic animals have bad qualities as well as good ones. In-breeding perpetuates and intensifies both the good and bad. If, therefore, the animal has more good than bad qualities, (if care is used) good results are likely to follow; on the contrary, if the bad are in excess, degeneration is almost certain.

The uniform excellence, strength, vigor, and adherence to a type as exhibited by wild animals, where seclection and copulation seems guided only by the passions of the animals, would seem to support the theory, that in-and-in breeding when directed by nature is a success.

There is other testimony of like character in what is known as scrub or common stock, when year after year, and generation after generation, the domestic animals running loose upon the commons or uncontroled in the fields, they in-breed at pleasure, and in fact receive no infusion of outside blood, and yet the change of any is so slight as to be unnoticed. We have all noticed, or known to a greater or less degree, of neighborhoods where the same families of swine have existed for ten or twenty years, with no stranger in blood to strengthen them, yet they are hardy, active, intelligent for their species, and seem none the worse for their incestuous connections.

Prof. Low and Herbert Spencer, in attempting to account for this state of affairs in the scrubs, say that it is because there is such a variety of form, color, and shape in a lot of scrubs, that that is the reason; that the fertility and vigor of the scrub remains unimpaired; that in-and-in breeding only proves fatal and disastrous when selections of animals of uniform color, form and features are bred in-and-in; that the germ cells become uniform, and by such uniformity their vigor and life is destroyed, and that unlike animals have unlike germ cells, and that the co-mingling of unlike cells is the same as if the animals were not related. Such a theory is very nice, and possibly learned, but it goes to pieces like a rope of sand, when it strikes the wild animals, where the different individuals are as like as two peas. They are, so far as

the eye can detect, exactly alike, and have a uniformity that any breeder may well envy but cannot even approach. If uniformity of germ cells follow uniformity of appearance, then we should, if the theory be true, expect to see the several species of wild animals soon degenerate, droop, and become extinct: yet we find them still flourishing, unconscious of the uniformity of their germ cells.

Again the Low and Spencer theories get another black eye in another direction, in this: It is admitted by all breeders that to maintain any of the domestic breeds in the higher state of perfection, the animals to be coupled should be as nearly alike as possible. Then if this be true, and it is not disputed, the instant you get two animals of exactly the same type or even closely so, you must get the same uniformity of germ cells, and then down goes your edifice: degeneration and disaster must follow, if their theory be true.

The simple truth is theories are cheap, and often for a time beautiful, but they are so frequently disfigured by contact with known facts, as to be scarcely recognizable by their friends after the conflict.

The deleterious effect of the marriage of close relations in the human family, are often cited to sustain the theory that in-breeding is wrong. Of course, such examples should have some weight, but in our humble judgment it should be but slight. Marriage in the human family is directed and brought about by love, while the coupling of animals is purely business. Love rarely stops to inquire as to physical structure and healthy development, while business looks or should look only at the physical. In the one case we see rash and impetuous sentiment, while in the other it should be a *cool, level-headed calculation.* Until mankind, in seeking mates, do as do breeders of animals, we think the comparison of little value.

Some writers assert that the history of the Hebrews furnish a strong argument against intermarriage. They assert that intermarriage of close relations are with them more frequent than among other nations, and that the result is more deformities, decrepitude and premature deaths among those people than any other civilized nations. Whether this be true or not, we are unable to say, but confined to our own observations of the Hebrew race, it is not true. Granting it to be true, however, for the sake of argument, yet we can off-set it by the results of intermarriage among the reigning families of Europe, who for generations have been intermarrying, and seem to be none the worse for such affinities. But as we said before, we do not consider a comparison in the human family of much force, for the reasons we have already stated.

The reader is already familiar with the history of the creation of the present Essex hogs. They are the result of close in-and-in coupling. The Cotswold sheep furnish another example, and the Bates and Booth short-horns are brilliant illustrations of incestuous breeding. But we do not know how many poor animals, resulting from such connec-

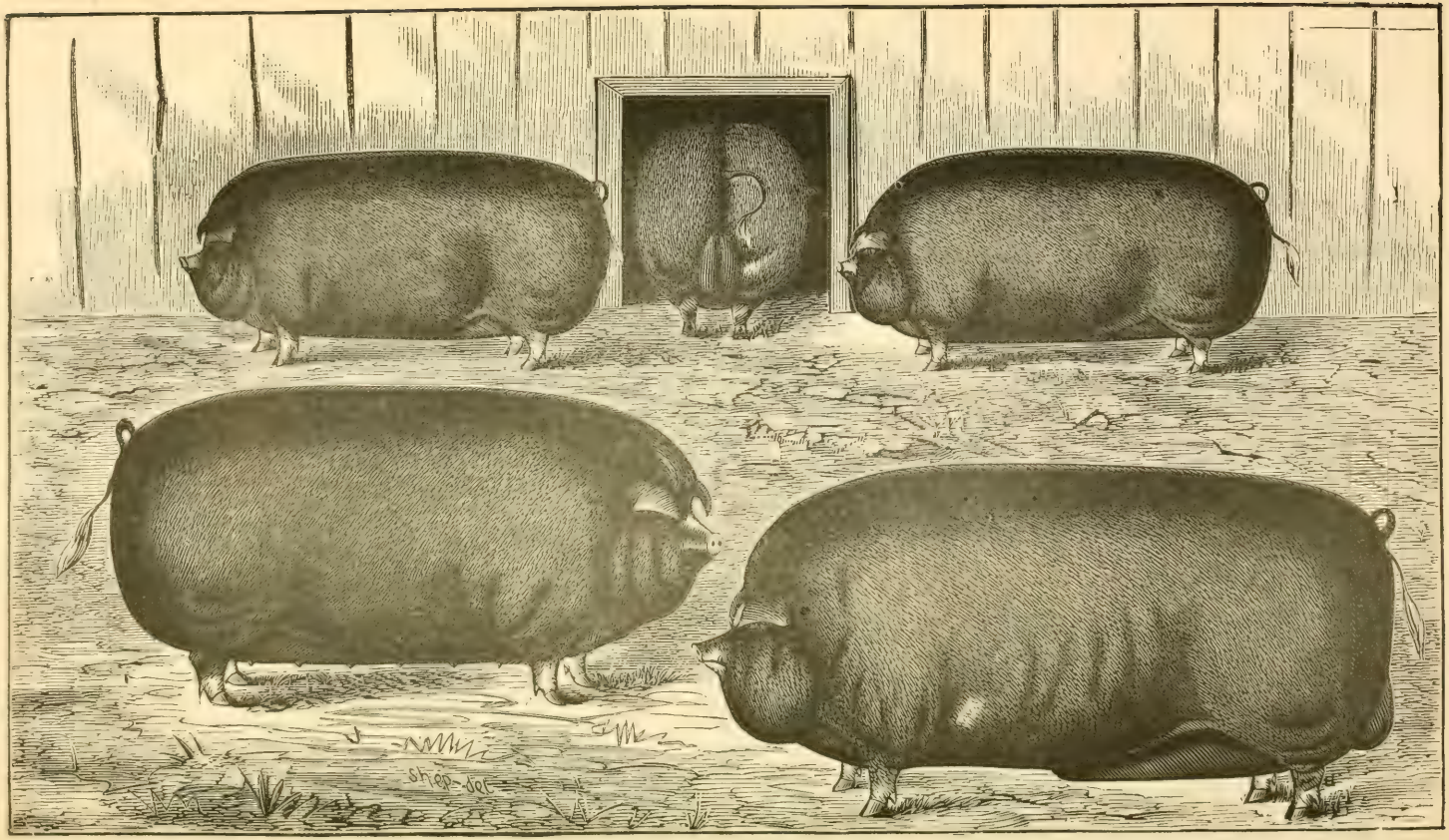
tion, have fallen by the wayside. If we did, it would greatly aid us. History has placed before us the splendid animals that have impressed themselves upon their descendants; if there were other kinds, their friends are silent. It is not necessary, however, for us to go so far back. The formative period of the Poland-China was a period of much incestuous breeding, and its latter history shows numerous recent examples. Commander is closely inbred. Lord Corwin 2d is another similarly inbred animal, and but few animals have more strongly impressed themselves upon their progeny than those two boars. We think Lord Corwin 2d was one of the best and most uniform breeders we ever knew. We once by accident had a litter from brother and sister, and it was a very even and excellent one. Our experience in close breeding is limited, but we have had good results as a general rule. Col. Bess was closely inbred, an exception to the general rule; although he threw many good pigs, he was not a uniformly good breeder and was himself deficient in size.

The writer has now three young sows, one year old July 25, 1886: their sire and grandsire is one and the same, viz.: Buckeye Boy; they are all one litter, and, large, growthy and handsome; there is no appearance of impaired constitution, nor lack of fertility. We have been experimenting with another lot—a litter of pigs farrowed May 2d, 1886, whose sire, grandsire and great-grandsire is Give or Take; there were five pigs in the litter, one was killed on the second day after farrowing, and the sow has raised four; three of the pigs are large and thrifty, and one is small and does not seem thrifty; the largest one, a boar, will weigh now, August 2, 1886, about one hundred pounds, possibly a little more; he is three months old; the other two are nearly as large; all are handsome, active and vigorous, and seem to be growing more rapidly than some others which are not bred so closely.

By line-breeding you secure, or at least have better opportunities for selecting from the same family, animals that have not only present uniform appearance, but inherit such traits and peculiarities. Line-breeding tends to refinement of bone, hair, head and ear, and if judicious selection as to vigor and strength are made, a forward movement will be the result. Line-breeding, as the term is usually applied is confined to the female line, but it is equally important to apply it in the male line, and upon reflection, we think more so; as, granting that the influence of the male and female are equal, yet the boar is used upon so many females that he may well be considered, as he is often termed, half the herd.

Breeding in line or close breeding has been successfully followed by several of the best breeders of Butler and Warren Counties, Ohio, whose intelligence and capacity as breeders are unquestioned.

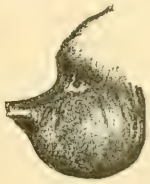
On the other hand, in cross-breeding there is a lack of uniformity—uneven sizes and shapes, not only in the herd but in litters; and this



but follows the known principles of breeding. Take for example an animal in whose veins course the currents of a dozen different families, whose characteristics are more or less dissimilar, and cross such an animal with another having an equal number of opposite currents; now in such case there is no uniformity in the blood of the parents and the strong probabilities are that the litter will be uneven and lack uniformity. Often in such cases no two of the litter will be similar in color, form or size. This is a natural result of so many contending influences.

Now our notion is to avoid both extremes and combine the good of both systems by making one out and two in-crosses; make the out-cross on the female side, and success will follow if judgment, skill and care is exercised. The reason why we say make the out-cross on the sow, is that you can try several different crosses at the same time with less danger. If the boar is used as an out-cross there will be danger of losing a season's product from all sows bred to him, while on the other hand, when the out-cross is a sow, if it is a failure you lose but one litter. We have noticed in our visits to Ohio, during our early history as breeders, that we would, in travelling about, frequently find a breeder who had staked his all upon a certain untried boar, and failed, the result was his year's breeding was only used as porkers. Such results have happened with the best of breeders, hence we say make your out-cross a sow, or two or three different sows, and take choice of the results.

There has been so much written, and the opinion of breeders of equal intelligence are so directly opposite, that we recommend every breeder to experiment for himself. He will then know how it is; at least he can satisfy himself; and, after all, he is the individual who has to act, and if experience is a dear it is a good school, where lessons learned are indelliby impressed upon the mind. In addition to trying, give the world the results, whether good or bad, and they may aid in settling a much-vexed question.



PEDIGREES—THEIR USE AND VALUE.

A pedigree is the family history of an animal. Every hog has a pedigree, because every hog has a history. Even the meanest scrub has a pedigree as long as any other hog, but it is not a written or recorded one. Pedigree, then, in its broadest sense, means a history of the family connections in the ancestral lines of an animal; but pedigree, in its sometimes limited sense, means a record of ancestry. Some would-be wise and assumed independent stock-growers scorn the idea of pedigree, as though it were a foolish and "dudish" attachment. Such persons instead of thereby showing a superiority, only expose their ignorance and thoughtlessness.

Webster defines "Pedigree" as follows: "A noun (contracted from the French, *par degrees*, by degrees; for a pedigree is a genealogical table which records the relationship of families by degrees; line of ancestors; descent; lineage; genealogy; strain; an account or register of a line of ancestry."

Every hog has a history, known or unknown, and every hog in America, if its history had been faithfully kept, or could now be traced, would run back not only to imported stock, but on to the beginning of the hog family. The principal difference between the pedigree of a thorough-bred and registered animal and its kinsman, the scrub, is, that the former has been in the hands of careful men, who for several generations have kept an accurate history of its ancestry and an account of their several peculiarities; while the scrub has passed through the hands of the careless and thoughtless, and its history, if any, is a disconnected tradition. One class of breeders pride themselves upon their care and accuracy, and the other upon their recklessness.

If a physician is employed, one is selected who has fully prepared himself by the study of anatomy and the structure of the body, and the effects of the remedies he proposes to use. Life and health are not wilfully risked in the hands of the man who prides himself upon his ignorance and reckless disregard of such important matters. If a house is to be built a skillful man is employed, and not a common laborer; if a

pilot is desired in directing the course of a vessel across the ocean or traversing some river, the one is selected who can understand and interpret the charts and maps which disclose the dangers in the pathway and point out the safe water, and not the ignorant, reckless man, who scorns such accomplishments and aids and depends largely on the *looks of the surface of the water*. What would be thought of a lawyer who spurned all knowledge of the facts and law of the case he was to try and announced that he should rely on the *looks of the parties* to the suit, or the physician who would prescribe for the patient without any knowledge of the patient or inquiry as to the symptoms that had preceded his visit, and it is just as idle and uncertain to attempt to breed good stock without a knowledge of the ancestry of stock to be used. The present appearance of the animal gives but a limited idea of its capacity and tendency as a breeder. The ways and methods of old nature are difficult and mysterious enough, even when directed by all the information attainable, and he who neglects all the aids he can command strikes in the dark and pushes blindly upon dangerous ground. The truth is, no person selects a breeding animal without some inquiry as to its sire and dam, and all persons try, even in buying scrubs, to get a son or daughter of some famous horse, cow, sheep or hog, that has been noted in the neighborhood, and will pay more for such an animal than for another equally good, that has no such known connection. Such persons do not once think they are relying on pedigree, but they are, a short, unwritten, sometimes unreliable, and always imperfect one, yet a pedigree all the same. If it is borne in mind that the *history* of an animal is its pedigree, the prejudice against the use and system of recording pedigrees will vanish, for no one pretends to ignore history.

It is quite common for men to trace their family connections to some great and good man, and when it can be done, it is not thought disreputable; on the contrary, it is a source of pride. That a man's parents or grandparents were or are honest, intelligent, good citizens, will aid him in securing the confidence of the public, while the man who is so unfortunate as to descend from a family, who for several generations have been criminals, will be closely watched and be an object of constant suspicion.

Another illustration is to be found in the titles to lands. Persons do not buy land without an abstract of title; this is a history of the title, a pedigree of the land. No person would think of buying land at anywhere near its value, where neither deeds nor a record of deeds have been preserved, and where the title exists only in the memory of man. Memory is too uncertain and unsteady, even though honest, for such an important matter.

All the above illustrations demonstrate that pedigrees *do tell* and have their influence in all the relations of life. Assuming it to be true, then, that mens' acts are governed by the history of themselves and

their property, it is only necessary for us to further inquire, shall that history be a written or printed one, or shall it be a mere tradition, passed from mind to mind? A little reflection and observation will easily settle the question of how best to preserve such history.

Every person has doubtless noticed the difficulty that men have in recalling to mind transactions which occurred years or even months ago, and how eagerly they grasp at every written word, be it memoranda, letter or contract, or books of account, to refresh the memory. How often we hear the expression, when a question of what occurred some time prior is up for discussion, "Well, I have it in writing at home, and that will settle it." Again, it will be noticed that every person will yield his recollection when contradicted by the written word. One of the best illustrations of the infirmity of memory was shown in the starting of each herd book. Those engaged in gathering information of ancestral animals doubtless remember the difficulties of obtaining any definite information even from the best posted breeders; and as an evidence of that, look at the short pedigrees in the first volumes of each record, and then compare those early pedigrees with the present ones, and the difference between certainty and uncertainty is marked. Or to put it in another shape, see the difference between written history and tradition.

Another test of the value of memory: Stop and think of any animal and try to recall to mind every ancestor in three generations; not one person in a hundred can do it. In written history carefully and conscientiously made, we can always place implicit reliance, and this is especially true of facts and circumstances put down as they occur. Thus it follows that the value of every record depends upon its accuracy and the extent of the information it affords. These tests should be impartially and honestly applied for the general good.

The necessity of a sytem for recording swine was felt long before the result was obtained, and the popularity and advantages are apparent to all, and especially to those who have availed themselves of the opportunities already afforded.

There are now swine records in the United States, as follows: Berkshires, one; Chester Whites, two; Jersey Reds, one; Yorkshires, one: Cheshires, one; Poland-China, four.

That the reader may have an opportunity of judging of their respective merits, a sample pedigree of each is here inserted:

AMERICAN BERKSHIRE FORM.

No.	Sex	Farrowed.	Breeder.	Sire.	Dam.	Owner
13802	S	Apr. 17,'84	T. C. Murphy, Thayer, Kan.	Jack Hood 13891	Lady Hood 13806	T.C. Murphy.

Secretary—PHIL. M. SPRINGER, Springfield, Ills.

THE AMERICAN FORM.

Ajax 1731.

FARROWED APRIL 8, 1883.

Owned by D. D. BOLLINGER, Hopkins, Mo.

Bred by H. M. & W. P. SISSON, Galesburg, Ill.

NO. PIGS IN LITTER, 3; BOARS 2, SOWS 1.

Very dark, with white points; white notch in face, ear drooping.

Sire—*U. S., Jr.* 1146, owned by H. M. & W. P. Sisson, Galesburg, Ill.; bred by C. W. Jones, Richland, Mich.; sired by U. S. 779, out of Bess Stibbens.

	Dam	*Got by*	*Bred by*
	Betsy Baker 6178	Col. Jones 505	C. W. Jones.
2.	Swatt 7th 2358	Magic World Beater 263.	
3.	Lady Swatt 3d 748	Jim Crow.	
4.	Short Tail Swatt	Bismark 2d.	
5.	Sandy Swatt	Wallace Boar.	
6.	Swatt	Tyrell Boar.	
7.	Swatt	Conover Boar.	

The above record is correct to the best of our knowledge.

Signed—H. M. & W. P. SISSON.

Secretary—JNO. GILMOUR, Vinton, Iowa.

THE CENTRAL FORM.

2895

Zelda's Gold Drop

Far'd Mar 21, '84
Color blk, white points, well proportioned hog, strong bone, good breeder.

Bred by Shepard Bros., Indianapolis, Ind.

- Sire: 2055 Gold Drop
  - Sire: 1589 Gold Dust 3d
    - Sire: 619 Y'ng Gold Dust
      - Sire: 549 Gold Dust
      - Dam: 690 Lady Mustin
    - Dam: 1024 R's Black Bess
      - Sire: 553 Governor 2d
      - Dam: 1022 Mayflower 2nd
  - Dam: 1026 Mayflower 3rd
    - Sire: 889 Prizer R
      - Sire: 883 R's Perfection
      - Dam: 394 R's Old Beauty
    - Dam: 1292 Mayflower
      - Sire: 887 Dick Fox
      - Dam: 417½ Ross' Bess
- Dam: 4222 Zelda
  - Sire: 485 Y'ng Perfection
    - Sire: 417 Perfection
      - Sire: 379 Prizer
      - Dam: 162 Q'n B'lk Bess T
    - Dam: 368 M's Lady Pugh
      - Sire: 143 Zebedee
      - Dam: 296 Moss Rose
  - Dam: 1240 Black Rosa 2d
    - Sire: 695 Modoc Chief
      - Sire: 485 Y'ng Perfection
      - Dam: 1196 Spot'd Perfection
    - Dam: 796 Black Rosa
      - Sire: 243 Duke of Preble
      - Dam: 130 Duchess of Preb.

Secretary—W. H. MORRIS, Indianapolis, Ind.

NATIONAL CHESTER WHITE FORM.

[The National Chester White Record form is similar to the Central Poland-China Record.]

Secretary—DR. E. R. MOODY, Eminence, Ky.

THE OHIO FORM.

CORWIN WORLD-BEATER 2d, 11,974.

Farrowed April 20, 1883. Littter, 8; raised —boars, 4; sows, 4.

Dark, with white points. Bred by JOHN W. BAKER, Somerville, Butler County, Ohio. Still owned by him, March, 1884.

Sired by Corwin Victor 3561; he by Tom Corwin 2d 2037, out of Cora Shellenberger 2880.

Dam—Corw W. B. 7906, by Tom Cor. 2d 2037. 4. Madam B. 3632, by V'ng's F Hog 2121.
2. World B. Sow 3d 2482, by W. B. 1213 5. Lady Cooper 3364 by Cooper Hog 14 3.
3. Lady Baker 1670, by son of Zeb. 1987.

Secretary—CARL FREIGAU, Dayton, Ohio.

THE NORTHWESTERN FORM.

Carrie O. 464.

Sire—Galesburg,	No. 959 A	Col. Jones,	504	Sambo,	81 A.
				I. X. L.,	672 A.
		Black Bess 3d,		Magie's World Beater,	253 A.
				Black Bess 2d,	508 A.
Dam—Black Hood,		Hood,	905 A.	Stonewall Jackon,	31 A.
				May Flower 2d,	1940 A.
		Little Beauty 2d	3326 A.	Joe Bismark,	605 A.
				Little Beauty.	

Date of farrow, March 1, 1883.
Bred by W. & J. T. Laughlin, New London, Iowa.
Present or last owner, H. C. Stoll, Beatrice, Neb.
The above is correct to the best of our knowledge and belief.
Signed—W. & J. T. LAUGHLIN.

Secretary—J. O. YOUNG, Washington, Kansas.

TODD'S IMPROVED CHESTER WHITE FORM

HOLMES BELLE 168.

Farrowed in the spring of 1881. Litter, 10; raised—boars, 5; sows, 4.

Bred by S. H. TODD, Wakeman, Huron Co., Ohio; sold to H. P. EATON, Bucyrus, Crawford Co., Ohio;, in the fall of 1882; still owned by him, January, 1885.

Sire—King 3d, 205; he bred by S. H. Todd, Wakeman, Ohio.
Gr. sire—King 2d 203; he by King 201, out of Lady Whitney 406.
Gr. dam—Lady Laporte 2d, 324; she by Perfection 265, out of Lady Laporte 322.
Dam—Short Tail 688; she bred by S. H. Todd, Wakeman, Ohio.
Gr. sire—Kentucky 193; he bred by E. R. Moody, Eminence, Ky.
Gr. dam—Wakeman Belle 728; she by Perfection 265, out of Lady Bates 230.

Secretary—H. P. EATON, Bucyrus Ohio.

THE AMERICAN DUROC-JERSEY FORM.

[This form is similar to the American Berkshire Record form.]

Secretary—CHAS. HOLMES, Grinnell, Iowa.

SMALL YORKSHIRE FORM.

No.	Name.	Sire and Dam.	Date of Farrow.	Breeder & Present or Last Owner.
227.	Lord Tilton 2d.	Lord Theodore 104. Duchess Queen 252.	Aug. 10, '83.	T. R. Proctor. *J. F. Ferris.*

Secretary—GEO. E. HARRIS, New York City.

There they are, and severally speak for themselves. "You pay your money and take your choice." All charge non-stockholders the same price for recording, viz.: $1.00, for the pedigree of each animal. The

Berkshire was first in the field, and I believe the Ohio next, then follow in order the American, Central, National Chester White, Northwestern, Jersey Red, and Yorkshire and Todd's Chester White. Each breed has also adopted standards of excellence, which will be found in the latter part of this book in connection with the several histories of the breeds. We think it will be admitted by the admirers and persons interested in each record that none of them are perfect.

There should, in the opinion of the writer, be a consolidation of the four Poland-China Records for the interests of all concerned, but an argument on that subject would hardly be in place here. This book is designed to present such matters as they now exist, and not as they should, in the opinion of the writer. That we have an opinion, and a very decided one, as to which is the best of the different forms is natural, and we shall not hesitate to express it, at the same time we as promptly recognize the right and privilege of every other person to disagree with us. It is claimed by the advocates of the shorter forms of pedigrees that they are sufficiently long for practical use and more of them can be put on a page and therefore cost the association less and the breeder less by requiring fewer volumes for the same number of pedigrees, and that they are more easily understood. Each claim greater accuracy, but the question of accuracy is not so much the results of the systems as of care by the secretaries. For the larger and expanded diagram it is claimed and can not be disputed that it presents to the eye in every pedigree for the first five generations, more than double any other form. It is further claimed that the presentation of the name and relative place of each animal enables the breeder to call to mind each animal embraced in the pedigree, and of course to call up the peculiarities of each animal so named, and thereby causes the careful and thoughtful breeder to figure up the probable effects of the twenty-eight currents of blood in the veins of the animal recorded. Where the sources and peculiarities of all the rivulets that go to make up the stream are known and considered, the results can be much more easily calculated than when more than one-half of the forces are left out of sight. The short systems present only a partial view, while the diagrams give the breeder the whole of the family tree. If a pedigree or history is valuable, then the more you get of it with the least trouble and in the most compact form, the better. The breeder should know and think of all the currents of blood in each coupling; this means to keep in mind the names and peculiarties of at least fifty-eight animals. It can not be done by memory; no short form pedigree furnishes the necessary information, without running through several volumes, and then in such a manner as not easily comprehended, while the diagram system presents it at a glance. All that is needed is the pedigrees of the two animals to be coupled, and the names and places of the controlling currents of blood are before the eye of the breeder. In the future the breeders will

demand the best, and stockholders will have to take the chances. The breeders should not only demand the pedigree that gives all the ancestors for five generations, but a score of the animals published with the pedigree. If a pedigree is valuable then the best pedigree is the only one that ought to satisfy breeders.

In studying the currents of blood in animals used as breeders, a pedigree is almost a necessity, especially with the younger breeders. It is the index that leads to information. It does not contain all the information desired but it contains general points, such as names and relationship, and the relative position of such relationship. From such a starting point, the breeder, if he does not know the peculiarities, he can find out much by inquiry of those who do.

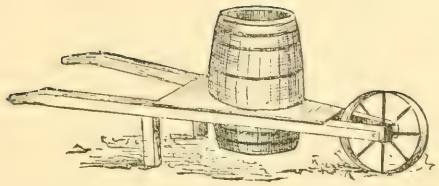
It is the opening to the rich mine and points to the place and direction where the richest gems are found. Suppose a man to have grown up without any definite knowledge as to who his ancestors were. After a while it is learned that a man by his name has fallen heir to a large estate. Is he the lucky man? Can he rely on his *personal appearance* to secure the prize? Not much! He is helpless; he knows nothing of his genealogy. In the course of time he discovers an old family bible in which is the record of his birth and the lineage of a long line of ancestors, tracing back to the person who left the estate, and with the aid of that record he secures the property. Has he been benefitted by the record of his pedigree? His pedigree was the same, and was not changed by the record. He was entitled to the estate as much before the record was found as after, but it was as much beyond his reach without the record as though he were not entitled to it. It simply showed or helped to show the courts where the treasure belonged.

So it is with a live stock record. It does not make the animal any better individually, but it points out the richness of his inheritance, so that it can be properly utilized. It is a well established principle in breeding that inherited traits are transmitted, and the force of such transmission depends upon the length of time such traits have existed in the family. Then, when we find an animal whose appearance suits us, if he has a pedigree, we can find whether that appearance is a family trait and how long it has been so, and thereby the probability that his progeny will inherit and receive the accumulated treasures.

With the record as a guide it is easy to hunt up facts, and by them guide our footsteps and keep ourselves in the path of progress and improvement, but without such a guide we walk in darkness and stumble over unseen and unknown obstacles, and wonder why "*such luck*" befalls us.

The uses of the pedigree then, is to furnish us the name, character and volume of the currents of blood, that as breeders, we are constantly giving direction to. Business men watch the markets, get reports from every country, keep statistics of the past to enable them to

judge of the future, The lawyer relies on precedents; the doctor on past experiments and known qualities of his remedies; the scholar on his books, which record the actions of men and principles of philosophy discovered; and shall the breeder of live stock alone and unaided, except by appearance, continue to stumble along, not caring what the past has developed, looking neither to the right nor the left? Certainly he will not be guilty of such folly.



CONVENIENT SWILL BARROW.

WHO IS THE BREEDER?

One way of identifying a registered animal in addition to to its description, is to publish with its pedigree the name and address of its breeder. This is done not only as a part of the description, but as a means of allowing the public to ascertain the fact of copulation. When a man owns a sow and breeds her to a boar of his own and keeps her until she farrows, there can not arise a question as to who is the breeder. But there has been, and still is, among breeders some question as to who should be recorded as the breeder where a man owns a sow and sends her to a neighbor's boar for service. There should not be any question, however, in such a case, for the reason that the ownership of the young follows the ownership of the dam, and for a stronger reason the owner of the dam takes or sends his sow, and in that way becomes the first moving cause, and almost invariably the owner of the sow selects the boar he wants the sow coupled with and gets the consent of the owner of the boar for such service, while the owner of the boar merely consents. In such a case the owner of the sow is the man whose mind has planned the mating and studied the combination of blood. Let it be good or bad, it is his idea, and his direction, and the results are his. It is true a man often takes a sow to a farm where there are several boars and the owner of the boars may refuse to let the owner of the sow select which one of several boars can be used and restricts the owner of the sow to one particular boar, or the owner of the boar may by argument convince the owner of the sow that a particular boar is the better cross. Still it requires the consent of the owner of the sow, as he is at liberty to refuse to breed unless he can have his choice, even though that choice be Hobson's choice; so that it is in either event, the mind of the owner of the sow that makes the combination possible.

There is another case which has sometimes occurred, and may again. Jones has a sow which he desires bred, and Brown has six boars of same breed. Jones is not familiar with the pedigrees or the characteristics of any of Brown's boars. Jones, however, has confidence in Brown's knowledge of his animals and judgment in breeding, so Jones sends his sow by his hired man, to Brown's farm, with instructions to Brown

to breed the sow as his judgment dictates, and all will be right. Thereupon, Brown studies the probabilities of the combination and directs the breeding. Now the combination is the result of Brown's knowledge and skill; at least it would so seem, yet this is only true in a limited sense. Jones is the first moving cause; he owns the sow; he can have her bred or not; he desires that she should be bred; he, from lack of time or on account of his reliance in Brown's honesty and ability, selects Brown as his agent to act for him, and Brown's act is therefore the act of Jones. It is not different in principle, although it may be in degree, from a case where Jones merely advises with Brown and gets information and an opinion from Brown, which Jones afterwards, upon mature reflection, concludes to adopt in whole or in part; Jones is the owner; he has a right to and does direct the breeding directly or indirectly; he may use others as agents, still it is his mind that selects the agent, and the progeny is his, so that in law as well as morals Jones is the breeder.

Another example of dispute arises as follows: Jones owns a sow and breeds her. Afterwards, and before she farrows, Brown comes along and purchases the sow. She is delivered to Brown who keeps her until she farrows. Who is then the breeder? The pigs are Brown's, because they follow the title of the dam; but Jones is the breeder; he was the only person who could or did control the sow at the date of the coupling. It was his skill and judgment that worked out the combination, and it was not affected or in any manner controlled by any other person. He had the power to withhold the coupling of the animals; his determination was the law of that issue and to him alone belong the results, whether good or bad. The fact that he parts with the animal before the results are known, can not affect his rights as *the breeder*.

Another complication frequently arises. Smith has a herd composed of boars and sows; is in fact a professional breeder of improved swine. Black is engaged in a similar business. Black goes to Smith's place and selects a sow, prices her, and says to Smith, "If you will breed that sow to your boar, Tiptop, I will give you fifty dollars for her, the money to be paid when the sow proves to be in pig." Smith says, "All right: I accept the terms." Smith then breeds the sow, and when she is safely in pig, is delivered to Black, who pays for her, takes her home, and keeps her until she farrows. The pigs are bred by Black, because he is the conditional, and afterwards in pursuance of the contract, the absolute owner, and directs the breeding; it is his combination and direction, and he is the owner of the sow and pigs.

Suppose we change this and put in another factor. After Black has purchased the sow and got her home, and before farrowing, White comes along, purchases the sow, and takes her to his place, where she farrows. Who is then the breeder? Why, Black is; because he directed the combination and was the owner at the time; because he

performed the conditions of his contract; he was the one who directed the mingling of the currents and took the responsibilities of the cross.

There is still another example more complicated than any of the preceding, which at first blush may seem to be a puzzle. It is as follows: Jones has a herd, and Smith goes to his place and says, "I will give you fifty dollars for the sow, Whiteface, if you will breed her to Nonesuch, payable when the sow is safely in pig." Jones accepts the terms and breeds the sow as directed by Smith. After she is in pig from that coupling, Smith fails to pay the money, and Jones will not deliver; in short, the trade is off. Who is the breeder? We say Jones is the breeder. He was the owner of the sow at the time of coupling, subject to a condition, which has not been performed; It is true he coupled by direction of Smith, who had a conditional interest, but Smith failed to comply. Jones was induced to make the combination for a consideration promised, but which afterwards failed; Jones held the sow as his unless the conditions of the sale were complied with: that promise induced him to act, and the fact that he acted on the belief that he would thereby derive a profit in cash on his sale, is not different in principle from making a combination as the result of an argument. In the case put the argument used was money (a potent one), but it was still the influence that prompted Jones to act. Jones did act, and Smith failed to keep his promise; the property remained the property of Jones, and Jones is the breeder; nor does it change the result in the least, if after Smith failed, Brown buys the sow, after coupling and before farrowing, Jones is still the breeder and must be recognized as such.

The true rule is, then, that the real owner of the female at the time of coupling is the breeder. Any other rule (and all rules must be general ones) would open the door for disputes as to who exerted the most influence upon the mind of the owner. Whatever may be the kind or extent of the influence that prompts the owner to act, it is his act, because the influences have caused his mind to act.

As well might the superintendent of a herd, who in fact directed all couplings, claim that he was the breeder rather than the owner, overlooking the fact that back and behind all his action is the master mind that had the judgment to select him and rely upon him. The master's mind is the original moving power; the other only the instrument—an intelligent one it may be—but nevertheless an instrument, the result of the sound or unsound judgment of the owner in selecting such an instrument.

THE PROFESSIONAL BREEDER

It has often been said that poets are born (not an unusual circumstance in the human family). We will not say that only those persons are or can be qualified for breeders who are born with a love for animals, for we believe that such affection can be acquired, but it is certainly true that an inherited tendency to love animals, be with, handle and breed them, is an acquisition not to be despised. Whether the affection for animals be inherited or acquired, it must exist in him who enters the list, if success is desired. In ye olden time professional breeders were few and far between. However the necessity for improvement in live stock in these latter days have drawn into line a large number of intelligent, earnest, active and progressive men, so that he who now enters the profession will have "hot company," and will have to exercise his best endeavors to keep up with the procession. He must have enough patience and caution to keep him from acting hastily and jumping at conclusions. He should be industrious, as that will prompt him to give proper attention to the wants and necessities of his herd.

He should be methodical and critical enough to prompt him to keep things in place; do necessary things at their proper time and in the best way; cause him to know his animals all and singular in all their points and qualities, and reveal the merits and defects of each, when the ordinary man sees them only as a whole.

He must have a quick, clear and accurate eye for form, so that he can quickly compare by the eye alone the several points and characteristics, and a retentive memory to retain from year to year appearances and results in old and young.

He should be self-reliant, and not lean upon others, but have and maintain opinions of his own. It will prompt him to rely on his own judgment and eyes, and not be bothered with a tape-line for measuring. The tape-line may do for a beginner to learn the relative size of animals and their different parts, but it can not fill the place of the accurate, quick and comprehensive eye which takes in the situation at a glance. *The tape-line can not compass symmetry*, one of the important

things which the breeder must be able to estimate rapidly and correctly.

He must be honest both with himself and others; this will enable him to see defects in his own herd and excellencies in others, and cause him to treat others fairly; it will require the use of the *knife* often.

He should be inquisitive and persistent; this will cause him to search for causes that produce good and bad results, and among other things the source and nature of diseases; it will and should prompt him to open and examine every diseased pig that dies, so as to know how the next one with like symptoms is affected.

He must be cool-headed so as not to lose his head in danger or when prompt and level-headed action is necessary.

He must have a fair supply of that uncommon article usually called *common sense*. It will cause him to look about and keep his eyes open to all appearances and to estimate their force and probable effect; to note the differences of points in animals, of low condition of flesh as compared with others in opposite flesh, or of the same animals in different conditions and under different circumstances, and repeat such observations year after year until he sees in each successive change in the animals such things as he has learned to associate with future good or bad; it teaches him how to classify his young animals, and how much, and when, to expect desired results; it will protect him from humbugs and imposters, and teach him to appreciate and hold on to a good sire and dam when he has them. It will cause him to exchange ideas with other breeders, and to select stock from breeders who keep their records and books straight and who do not rely on *memory* for information as to their combinations.

The professional breeder must delight in his calling. It will keep him at home instead of prompting him to loaf away his time in town, and will make the company of his herd more attractive and agreeable than the beer-mug or curbstone politician; it will make him watchful, careful and attentive; it will prompt him to sit on the fence and hang around the pens to see how the pigs grow and develop; to notice the changes from pig to hog; the effects of different kinds of food, shelter, and the result of his combinations of blood. Nothing promotes the growth of the breeder so rapidly as this constant watching and comparison of one combination with another, and the effect of the different currents of blood that he has directed. It is time well spent and an education that can be obtained in no other way.

He should be careful of his reputation and see that it is not clouded by neglect or dishonesty. He must have a reputation for giving, and must give, his personal attention to his business, and he will have a great advantage over the breeder who breeds at long range and leaves everything to the judgment and watchfulness of a herdsman. His brains should be his superintendent and direct all his business. Others can do the manual labor, but all should frequently come under his eye.

He may talk much or little, but he must *watch, read and think*. He should be a quick and ready writer, so that he can answer correspondents plainly and intelligently.

He should attend fairs, and go, see, and talk with his professional brethren, and he must watch and learn. He ought to know how, when, and how much to advertise his stock; when to buy and sell either stock or feed; and how and when to feed.

Often the men who attempt breeding do not succeed, and such persons very naturally lay the blame on the farm, stock, or person of whom they have purchased the stock, while as a rule the trouble is with themselves. It is so easy, convenient, and self-gratifying for persons to lay their misfortunes upon the shoulders of others that they seldom stop to question themselves and try to find the real culprit. Such a spirit must be banished upon entering this field. One of the first elements of success in the breeder is self-examination, and if they who enter the profession have not the courage and manliness to do so, they had better choose another profession where errors, mistakes, negligence and stupidity do not stand out so boldly and continuously.

The breeder ought not to expect to jump at one bound to the pinnacle of greatness as a breeder; no man has ever done so; on the contrary years of patient work and study bring him on to a comfortably ascending plane. Experience teaches us that the science of breeding is progressive, or rather the ability to direct Nature's devious ways is greatly aided by the light of a thoughtful and watchful experience; that the art becomes easier and more certain as the milestones of the years pass by, if the mind has profited by the past. On the other hand, if stumbling and trusting to luck is the method pursued, the breeder will still continue to stumble, nothwithstanding age and experience.

Perfection and absolute freedom from blunders and mistakes can never be attained, but care, thought, work, judgment and reflection will avoid many stumbling blocks that the careless and thoughtless continue to fall over year after year. Preconceived notions and prejudices must not be blindly followed; they must both yield to the facts presented by the herd from time to time.

Never be in a hurry to condemn a breeding animal. One trial is not enough, and may on account of conditions be an unfair one. There is often luck in leisure. *Keep cool and go slow.*

BREEDING FOR PORK.

It is not every one who is qualified or desires to raise hogs as professional breeders, nor would it be profitable for all farmers to do so. There is money, *and lots of it*, in raising hogs for pork. If the person who desires to become a professional breeder, has had little or no experience as such, it is better for him to learn how to mate and handle hogs by first breeding for pork.

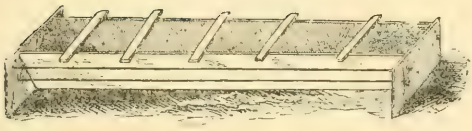
To breed for pork thorough-bred females are not a necessity. It is true they make good and profitable porkers, but a herd of thorough-breds are expensive, and grades are usually just as good as pure-bred, if pork is the only object. To start a herd of porkers, buy a thorough-bred boar and twenty common sows; couple the boar with the sows; the first cross will make the progeny half-bloods. Select the best of the females of the half-bloods and couple them with another thorough-bred boar. Each year select the best sow pigs and use upon them only thorough-bred boars, and you will soon have a herd of porkers equal to thorough-breds. We are aware that this is not professional advice, nevertheless it is sensible and honest advice, as every breeder knows. Your thorough-bred boars can be purchased young at $20 to $30 each, used one season, castrated, and fattened, when he will bring nearly as much for pork as he cost originally. Say you have twenty sows and raise an average of five pigs each, making a hundred; then if you pay $25 for the boar, your improved pigs cost twenty-five cents apiece more than scrubs if the boar is counted as nothing; the same or less feed will make the grade pigs weigh at least one hundred pounds each more than the scrub, and if pork is $4 per hundred, by an investment of twenty cents you make four dollars. These figures are all low and not fanciful; certainly money can not be made more rapidly than by improving the herd. The lower the price of pork the more important it is that the farmer have the best *machine* to work up corn at a profit. Life is too short to waste it in feeding scrubs. It is best to use only pure-bred boars upon grade or scrub sows, but if a person is too poor, or it is impossible to obtain pure-bred boars, then the next best is a good grade boar, as anything is better than a scrub, and the nearer

full-blood the better. In breeding for pork it will not to do say, for it is not true, that a grade male should not be used, for the common stock of the country has been greatly improved by the use of grades, but it is true that pure blood boars are much better for use upon grade or scrub sows than any scrub or grade.

This only applies to breeding for pork, and can never be applied or even considered in raising thorough-breds for breeders.

Pigs intended for porkers should be crowded rapidly and not carried beyond ten to twelve months. The profit lies in getting to market promptly and often. If big hogs are bringing most money, hold over until second year. If very fat hogs are demanded, make porkers respond to the demand, and if more lean are desired, market before they get so fat. The idea of changing breeds, as very lean or fat hogs are demanded, is folly, when the whole thing can be regulated by the amount of flesh put on.

Care, judgment and skill pay proportionately as well in raising porkers as thorough-breds. Remember that, "Whatever is worth doing is worth doing well."



A CHEAP AND STRONG TROUGH.

BREEDERS, DEALERS AND RAISERS.

Having selected your place or farm, you should consider whether you will be a breeder in the highest sense, a mere dealer, or a raiser.

This may seem a foolish question, but it is a serious one, and the determination as to which character will be assumed marks an event in life. It is not every man that handles hogs, and couples the sex, that can lay claim to the appellation of a breeder. There is no great skill in merely raising pigs. A few rules, easily understood and applied, will enable any one of ordinary intelligence to be reasonably successful so far as numbers are concerned. In fact the animals, if left to themselves, will propagate their species, as is demonstrated by the action of wild and common domestic animals. The man who has no experience, and has sense enough to let down the bars, can couple the sexes, and supply feed in a humdrum sort of a way, that will produce pork, but whether at a loss or profit he does not know and never stops to consider. This, however, is merely mechanical or instinctive work, and is not breeding swine in that higher and better sense.

The use of the same general agencies in so far as animals and feed are concerned, is the same with both raisers and breeders, but there the resemblance ceases. The raiser is the primary scholar, and is struggling with the A. B. C.'s and straight marks, while the true breeder is in some sense the graduate. The letters of the alphabet furnish the medium for the mediocre and the genius to express and communicate thought, yet the one tires you with commonplace or confused ideas, while the other furnishes you with "thoughts that breathe and words that burn." The raiser is content to plod along the dull, dusty road of the thoughtless past and leave Nature as he finds her; to do as his father did seems his highest ambition, and the old blazed path his only guide. Such a plodder will never reach the broad highway of progress for its existence is unknown to him; he is drifting through life and its duties like a mere machine and feels and believes, or at least seems to, that his stock is as good as anybody's, and is, therefore, content. The true breeder, however, is in a certain sense a creator, for he has taken the wild hog and the scrub, and by careful, thoughtful

mating, treatment, selection and re-mating, has produced new breeds in great variety; each so unlike the parent stock and each other, as to scarcely bear a resemblance or seem to have had a common origin. From his hands we have to-day the Suffolk, Chester, Poland-China, Berkshire, Essex, Jersey Red, Victoria, and others, each of which eloquently and practically attest the touch of his genius and the power of mind over matter. It is not, however, the genius of inspiration, in the common acceptance of that term, but rather that born of *patience, labor, love, judgment and ambition.*

The true breeder will constantly strive to arrive at some higher ideal, and to do this he must experiment with care, observing closely and thoughtfully each result, and make failures and successes stepping-stones toward the goal of his ambition. In every vocation of life failures are numbered by the score, while successes are easily counted upon the fingers of one hand, and the breeder who rashly expects greater certainty will be disappointed. The best things come to us only as the result of labor, patience, courage, judgment and ambition. The polished and glittering diamond are each extracted from dirt and rocks by just such spirits. The law of gravitation was suggested to Newton by the apple falling upon his head, and the steam-engine to Watts by watching the escaping steam from a tea-kettle. Yet these simple and commonplace things had been felt and seen by hundreds of plodders before without a suggestion. To Newton and to Watts, however, these simple hints led to an awakening from which the world has been greatly benefitted.

The breeder must in like manner notice and profit by everything that comes within his observation. That which seems commonplace and of little significance, may, upon investigation, lead to some heretofore hidden law showing cause and effect. If you wish to be a breeder in that higher sense, study, watch, work, and meditate until your grand ideal stands before you perfect in form and substance. The ambition to excel will render that easy and pleasant, which otherwise might seem dry, tedious and irksome.

The breeder not only knows a good animal when he sees it, but how such success has been attained. The dealer may by frequent contact with and handling of such superior animals, be as quick to recognize their excellencies as the breeder, but wholly ignorant of the science that creates such grand specimens. Each of these characters named at the head of this chapter, are useful: the breeder, to create; the dealer, to disseminate and spread them abroad; and the raiser, to supply meat for the great markets of the world. The raiser will continue to supply meat at ordinary prices, while the breeder cannot supply the demands upon him at five or ten times that sum. There is now, and always will be, ample room for all, but it is very important for the reader to select his channel at the start, and read these pages with reference to it.

SELECTING BREEDING ANIMALS.

It is difficult to impart information by the aid of pen and pencil that will be an unerring and intelligent guide for persons who desire to select animals suitable for breeding purposes. It is not a new or untrodden field, yet it is one full of errors and uncertainties, and often of glittering generalities. It is like all other knowledge, in this, that instructions, if carefully and thoughtfully considered, aid the beginner a great deal, yet do not fill the place of experience. Selecting breeding animals is an education that can never be completed, and years of practical experience will not guide unerringly. Great proficiency may be attained, but the dilligent, careful and thoughtful breeder will always be learning. The writer hereof does not claim infalibility, nor perfect mastery of the science of breeding and selection; on the contrary errors and mistakes lie plentifully along a pathway of more than twenty years active experience; that the future may exhibit many more is not only possible but probable. If some of the many stumbling blocks can be located and pointed out, and fairly good paths indicated for consideration, the writer's object will be attained. It is upon such a theory that the following suggestions are submitted.

A common expression of the books and persons is that, "*Constitution is of the greatest importance.*" This is true, and as put, especially when accompanied with a wise and mysterious look, is designed to be very sage and valuable advice, but does it impart to the inexperienced the necessary information how to determine whether or not the animal sought has this essential quality? There is no certain and infalible outward sign of this much desired and essential thing called constitution, yet there are many outward signs that indicate not only its existence, but the degree of its strength. As commonly used it means the vital power or health and strength of the animal. One definition given by Webster is as follows: "The state of being; that form of being, or structure and connection of parts, which characterizes a system or a body; natural condition; make; confirmation." This, however, is not, strictly speaking, the sense in which it is used by breeders, unless something additional is added. Some of the outward signs of a strong

vitality then, are a large chest—that is, that part of the hog enclosed within the ribs. There lie the heart, lungs, and next the liver, stomach, and the other internal organs, and especially the bowels, bladder and kidneys. The body must be so shaped as to furnish a large, roomy cavity for those organs to have sufficient room for full sized organs and to insure their full and free action. The idea is conveyed by the expression, "*a good barrel*," in speaking of the body of the animal. It may not be amiss in this connection to speak in a general way of the functions of the several internal organs above mentioned. The stomach receives and digests the food—that is, it reduces it ready for use by turning it in a fluid state ready for conversion into blood; to enable the stomach to successfully perform this work it must be large, strong and have plenty of room. The fluid next passes into the small intestines, where it is met and mingles with a fluid discharged from the liver, and thus becomes a milkish color.; it is then taken up by little ducts of the intestines and passes into the liver, where it undergoes important changes, and thence to the heart, and by it through into the lungs, where it is vitalized and oxygenized by the air breathed into the lungs, and taken back to the heart where it is pumped out or forced through the arteries to every part of the body. The kidneys secrete the watery portions from the intestines and pass it to the bladder, which is a mere receptacle, and from thence is discharged as urine; the undigested portion of the food passes on through the smaller intestines and is discharged from time to time in a solid mass. It will be readily seen that organs which perform such important functions must be large and must have ample room for their ceaseless labors. In addition to this, the body should have good supports, a strong back, feet and legs. Tough feet and legs, and easy, quiet action, indicate good nerve.

The skin, hair, eyes, and tail, are all outside sentinels which tell whether the internal organs are working properly. If the eye is clear and bright, the hair smooth and laying close to the body, and the skin soft, elastic, moist or oily to the touch, and the tail carried in curls, the internal organs are doing their duty; on the contrary, if the eye is red, watery or dull, the hair dry, harsh and standing up from the body, the skin harsh, hot and dry, and the tail hanging straight and lifeless, there is something wrong inside, and as these symptoms are more or less intense, they indicate acute or chronic weakness, and lack of constitution. Well may it therefore be said that *constitution is of the greatest importance*. There is always unity in animal nature. A fine external form is the result of superior internal organism.

Then, in selecting breeding animals, select those which have broad, straight, or slightly arched backs, large, deep chests, full sides and flanks, good, tough, stout feet and legs, bright, lively eyes, smooth, soft and close-lying hair, and a soft, elastic skin, and the animal will likely have a good constitution. On the other hand, avoid sunken

and narrow backs, flat, narrow chests and sides, pinched flanks, weak, crooked or deformed legs and feet, harsh, dry hair, dull, red or watery eyes, and harsh, dry, stiff skin.

The foregoing embraces the writer's idea of constitution, as well as the outward signs of that strong, vigorous vitality which is termed constitution. Another thing to be looked after is *symmetry*. It is defined by Webster as follows: "A due proportion of the several parts of a body to each other; adaptation of the form or dimensions of the several parts of a thing to each other; or the union or conformity of the members or a work to the whole." This is the generally accepted definition and is no doubt the true one, but still it is not applied the same, or rather not in all ages and times applied to the same unvarying forms.

Education, fashion and caprice often control and direct the idea of what constitutes harmony of parts. This is illustrated by the changes in fashion, both in dress and in shape. To illustrate: Among the Greeks a large waist was fashionable for women, while in this age the small "wasp-waists" are supposed to be things of beauty. The old shad-bellied coats and knee-breeches were thought pretty in old times, but are now discarded. It is not necessary, however, to go outside of the hog family for illustrations. The different breeds of swine show strongly the different ideas of men as to style and symmetry, some prefering the short, sharply curved nose and upright ear of the Yorkshire and Suffolk; others the long, straight face and heavy, lopping ear of the Jersey Red, etc.; so that symmetry for one breed would not answer for another. The word then must be understood in a relative character, and although treated of in this chapter in general terms, it carries to persons of different tastes and education different meanings. To the breeder of each breed, then, there is, and should be, a symmetry for that breed, and this is best described by the adopted standard for the breed. [The several standards will be found in the latter part of this work.]

Whichever breed is selected, the symmetry should approach as near as possible the ideal hog of the selected breed. In addition there should be a uniformity in the animals selected; in other words, get them as near alike as possible. If you want to breed the largest of the breed, select all large ones; on the contrary, if the smallest of the breed suit you better, select all small animals; or, if you prefer the medium in size, select such sized animals; do not take some large and some small ones, and hope by coupling the one with the other to thus produce the medium in size, as disappointment will most likely be the result. Uniformity in size, color, shape and condition should be carefully looked after and adhered to. No one thing adds so much to the beauty and value of a herd as uniformity in size, form, color, and general appearance; and especially where the general standard of excellence of

the herd is close to the ideal one. Another important feature is pedigree. It must not be overlooked or neglected, not that it is everything as some contend, but that united with personal excellence, it puts the breeder upon a solid foundation and where he can with some certainty forecast results. It is the pedigree or history of the animal that enables you to learn whether it has for its ancestry pure-blooded and uniform animals. It is the record of the past that will be a guide to future events. From the pedigree you learn the degrees of relationship that the several animals you wish to purchase bear to each other and to good and bad ancestry, the effect of the combinations of blood, and to some extent the strength of the different currents. Neither appearance nor pedigree will do alone. They are inseparable and must be considered together, if an intelligent estimate is to be made of the probable capacity and value of an animal. Animals of the same family or line, and not too closely related, should be selected, rather than risk the union of different families. Do not be afraid of having your animals akin. It is one of the best, surest, and easiest roads to uniformity. The old and generally received opinion that animals not akin should be the only ones coupled, is in our opinion a mistake; and our opinion is based upon personal experience. For several years the writer held, practiced, and in a limited way, taught the "no-akin doctrine," but a somewhat stubborn nature finally yielded in that dear but valuable school experience.

Disposition is another important consideration. The animals should have mild and quiet dispositions, and the head, eye and ear are usually indexes of the temper. A broad, short head, and width between the eyes, with short, small ears and a mild eye, indicates good nature and contentment; while a long, slim head, small, restless eyes, setting closely together, and large, long ears, indicate a quarrelsome, vicious and stubborn disposition. It is not a supposable case that an ugly, coarse head is not an index of the animal. The animal can not be all right and the head all wrong. The same influences that tend to develop a superior animal will construct a superior head, and the head is the best index of disposition.

Another important thing is to select sound, healthy, vigorous and prolific animals and those that have descended from a long line of animals having such qualities.

In starting a herd, or keeping it up, whenever pigs are to be purchased, if possible go and make your own selections rather than send. The advantages of such a course is at least two-fold. First, you know, or should know, better what you want than anybody else, or better than you can write it, and in addition you can see the parents and relations of the animal and their characteristics, and improve your knowledge by observation, if you keep your eyes and ears open. If you cannot go, write your wants and ideas and get prices and descriptions.

You will not often find by going or writing just what you want, but get as near it as possible, and do not take an inferior pig because it is a few dollars cheaper. Cheap pigs are usually the dearest ones that are purchased. *Always get the best*; get them as cheap as you can, *but get them.*

The query is often put: Can breeding animals be safely purchased at fairs? or, in other words, are animals *fixed up* for the fair the ones to buy for breeders? There is much conflict of opinion upon this subject, and usually the persons who talk loudest about the danger of buying at fairs are the ones who buy them as often and quickly as at any other place. The preaching and practice vary very materially.

It is best to buy an animal where you have so many opportunities for comparison, not only of individuals but of families, and not only this, you have an opportunity of seeing how the animals fill out in full flesh and how their limbs bear their weight. If they are fat and yet active and vigorous, you need have no fears of their breaking down. The trouble that results from buying at fairs results more from a lack of proper management after changing hands than from defects inherent in the animal, and the further fact that in purchasing young, immature animals anywhere, at fairs or farms, it is something of a lottery. No one can tell certainly how they will develop. Blundering in selection will undermine, destroy or weaken years of labor. Take animals that are from large, uniform litters and prolific families.

The readers of swine literature have for several generations been told that in selecting you should choose males a little smaller than the females they are to be bred to. Following these antiquated and stereotyped directions, we have given similar advice and practiced upon the theory until experience, reason and observation has caused a change in our notions on that subject. First, we think it contrary to nature, for you will notice that in the *same family*, human or animal, nature gives the larger size, more courage and stamina to the male. You will find man larger than woman, the bull larger than the cow, the stallion larger than the mare; the cock larger than the hen, and so on through nature, with rare exceptions. Such are nature's efforts to preserve size, stamina, etc. If the old system is adopted of constantly selecting males of less size than the females, the result is a constant dimunition of the size and vitality of the herd. Of course there are exceptions, when nature, in trying to regain supremacy over a vicious mating, throws a large, vigorous male under such a system, but these are only exceptions.

The male should always have more size at the same age than the female, if you want to keep the herd up to the standard; but we would make the difference in the size slight for uniformity in breeding. You must avoid too much difference in size or the progeny will be likely to lack good proportion. In other words, avoid extremes in coupling; don't use a very large boar on a small, delicate sow, but that is better than a small, feminine-looking boar on a coarse, masculine sow, although

we have occasionally had good results from such extreme crosses, but it is the exception. Our advice then, is, select the males a trifle larger than the female and see if your pigs are not more uniform than under the old system of selection. We confess we clung to the old idea long and hard, but experience which is a dear school, finally convinces stubborn students that nature's ways are directed by a superior intelligence. You may theorize until your pocket-book is quite thin, but nature holds too many trumps for you.

We admire the pluck of the man, who thus persistently attacks the steady and irresistible forces of old nature, but must condemn his discretion. Now as to the number of animals. If you have not had much experience, touch lightly, until you have a liberal supply of it, for it matters not how much theory you have, you will learn that it takes experience to insure success. Every breeder, who has been long engaged in the business, will confirm this statement: that there are many little things that you can not learn by reading, and which must be obtained by the rough and stormy paths of active labor and observation. Without the practical work you are the school-boy who first enters upon the active business of life—full of theory, but the application of those theories to the practical struggle of life is often the puzzle that is difficult to solve. We well remember the enthusiasm and confidence with which we figured the price of animals to start with, the amount of feed and number of pigs we felt sure we could safely count on, and the result of the figuring was highly satisfactory; but the practical results were so far below our shining figures that we wondered at results.

Select sows as nearly uniform in color, constitution, size and symmetry as possible, and whose ancestry have been of like character, and get good ones or none. It is much cheaper to pay fifty or even one hundred dollars each for good ones than to take inferior ones at ten or twelve dollars each. We do not mean that high priced pigs are always the best. What we desire to impress upon you is, select the sow you want and get her as cheap as you can, but get her or none. In selecting sows be sure to get *heavy-hamed and broad-hipped* ones, that is nature's model for the female form. The broad hips and heavy hind quarters insure easy delivery in farrowing, and usually good milking qualities. Nature constructs the male with large shoulders and big neck, while the female is lighter in the neck and shoulders and broader in the loins and hips.

Now passing from the general directions, we will go into particulars:

First, let us take the head; it should have a fine feminine look, nose short and tapering from the eyes to the nostrils, good width between the eyes, ears fine and thin, pointing forward and setting closely to the head, instead of drooping down at the side; the eye should be clear, bright and lively, the jowl large and firmly attached to the jaw (not loose and flabby), neck short and arched, the back broad, body deep,

filling down well between the legs, toes pointing straight forward, the joint next to the hoof short and erect, hoofs not too long, toes setting close together and firm, large hams, broad loin, small tail carried in a curl, hair fine and free from curl or kink.

Let us impress upon you the importance of good feet, legs, back and hips, and you will find that the four points last mentioned are the hardest to keep as you want them. The head, ear and jowl you will find will give you trouble and anxiety, but as they are more in the nature of fancy points than constitutional, you had better pay less attention to them than the others just mentioned. Avoid coarse heads, large, thick, loosely hung, flabby ears, fish or crooked backs, crooked legs, bad feet, coarse hair, long, thin necks, slab sides, big, coarse tails, narrow hips and loins, a low carriage and loose, waddling walk. You have doubtless noticed hogs whose backs and bodies had a wavering or serpentine motion in walking, as though one portion had been constructed at a different time from other parts. It is a heavy, dull, listless walk and stupid air. Avoid them as they lack nerve and vitality. They were born tired and will always remain so.

Now as to the boar. It has long been a question upon which there has been great difference of opinion, whether the boar or sow exerted the more influence upon the offspring, and it is a matter which we have devoted a great deal of thought and atttention to, and can hardly say that we have a fixed and definite opinion upon the subject, (of course we mean in breeding thorough-breds, for in using thorough-bred males upon grade females there is no doubt as to the superior influence of the male). But we hazard the statement that it is about this way: If the sow has for several generations had a uniform size and symmetry in her ancestry, and the male she is coupled with is the result of crossing extremes in size and symmetry, then the sow will surely impart the more force and character to the offspring, and in like manner if the male had the benefit of uniform, vigorous ancestry, and the sow is the product of extremes, (and by extremes we mean a large sow coupled with a small boar or the reverse), then he will exert more force in stamping form, symmetry and character upon the young. There is another large element that must not be lost sight of. A vigorous, active animal is more impressive than the dull, sluggish one.

If the male and female are each active and vigorous and can trace back to an ancestry of uniform size and symmetry, our present opinion is, that as a rule, the male impresses himself the more. Believing as we do, that other things being equal, the boar is the most impressive, we suggest more care and caution in selecting him than the sow, and there is another reason: the boar is of necessity, coupled with several sows, hence a mistake in his selection is felt more strongly because of his influence upon a large part of the herd, while the mistake in the sow applies only to her immediate progeny. Our advice is, if you are

buying young pigs under six months, to buy a third more than you want to use, so that as they grow up and develop you can make a further selection, keeping those that develop best and disposing of the remainder to some one who is less particular. You will not lose anything and will have an opportunity to make careful selections after you have seen how they are showing up, as the season for use approaches.

Now let us repeat the advice given heretofore. If possible go and select, and go several times when the youngsters are at different ages, see them while suckling and after the weaning has thrown them upon their own resources. It will give you an insight in selection that you can not obtain by one visit. If you can not go in person, write and describe carefully your wants, and require the breeder to advise you definitely how near he can "fill the bill." We say that a pig which has a short head and tapering nose, wide between the eyes, small, thin ear, pointing straight forward (rather than sidewise) attached closely at the head (and if of a lop-eared breed breaking down nicely at the tips), a large, strong, tough, short under-jaw, large, full, solid, not flabby jowl, short, full, high-arched neck, large, full quarters, broad, straight, or slightly arched back, legs straight, of medium length and wide apart, feet tough and short, toes pointing straight forward, large around the heart and flank, straight from pizzle to forelegs, sides coming out even with quarters, small tail carried in a curl, rump inclined a little from loin to tail, but not steep, full on each side of tail, ham running down on the hock, and filling well between the hind legs, testicles large and carried low, hair fine and straight, without bristles, skin soft and elastic to the touch, body of medium length and of same height at shoulders and hips, head carried up, walk vigorous, active and easy, eye clear, bright and large, is about perfect. It will be a long time before you find such a pig. We have not yet seen one, but you must keep on the lookout for him, and we hope the day is not far distant when some one will have him. We have given the description as an ideal, and while it is impossible now to find such a pig, you want to get as near such a model as possible. Get the best you can and be content with nothing less, and try by judicious mating to raise better than any one else. You will find it a difficult task to raise a lot of extra boar pigs, but it has been done, and can be again. In buying or selecting males or females, have a care to feeding qualities, by that we mean those which fatten and grow rapidly. Watch closely for the evidences of a strong constitution, and never use a male that lacks any of the principal points heretofore given as indications of that indispensable quality. There is another indispensable quality, the result of some or all of the points of excellence given you. It is is the walk, form and action that make you exclaim: "He is a noble fellow." He has a lordly, and we might almost say, a dignified manner. Such an animal is always an impressive sire, for he has a *form, vitality, courage and stamina.*

BREEDING AGE, NUMBER OF LITTERS, MATING.

The young sow can be safely bred at eight to ten moths of age. At least a breed that cannot successfully stand the burdens of pregnancy commencing at that age ought not to lay claim to early maturity. The truth is, that the young sow, if generously cared for and liberally fed, will make a better growth and development from the age of eight months to time of farrowing, if pregnant, than fallow. It is the draft of the pigs in sucking season that checks growth and tries the stamina of the young sow. However, we like the plan of obtaining young breeders from fall litters and carrying them over until the next fall before breeding. They are then nearer maturity, if properly fed, and besides having more strength and stamina when they farrow, they show up their forms better at time of breeding, and thereby enable the breeder to make judicious selections and proper matings. Sows, young and old, should be bred between the 15th day of November and the 15th day of December for spring litters. This will bring the pigs from the 6th day of March to the 5th day of April following, and if required to change the time, would put it fifteen days earlier rather than any later. One February or March pig is worth two last of May or first of June ones. The early pig is ready to wean when grass is fresh and sweet, and grows off rapidly and attains considerable size before the hot weather and flies come, while the late pig has, with other troubles incident to pighood, to contend with heat and the torment of flies, to say nothing of the tough, dry grass left for his young and feeble digestion. By breeding early the matured sow may raise her litter and be bred again for a fall litter, and this we think the wiser course. Any sow two years old and over by the time the second litter would come, should be required to raise each year two litters of pigs. If this course is pursued there will be fewer old, barren sows, and if properly cared for and fed during the suckling season, their vitality is not impaired. Some breeders, and very intelligent ones, too, hold the belief that one litter is better than two, and claim that if the sow has a summer's rest the next litter will be stronger. We thing this is a serious error, and in a long experience we have never been able to detect

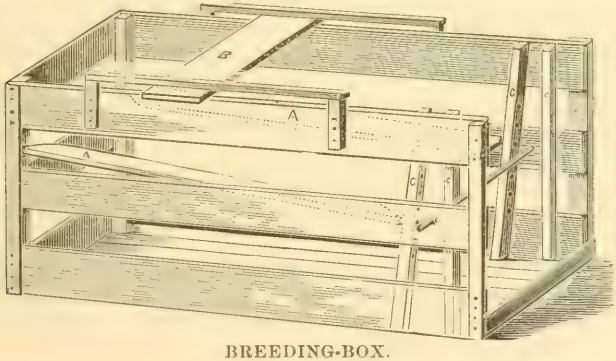
any dimunition of vigor in sows or litters where two litters are raised, and by letting them *rest* and accumulate fat in summer we have often had as a result barren sows in the fall and one or more seasons lost. In fact they had to be starved down poor before again commencing to breed. The starving process being much worse on their vigor than the extra litter. But as a rule the sow which has her first full litter at about one year should not have her second before her second year. Mating sows with the boar is one of the difficult periods of the professional breeder. It puts his capacity for the business to a severe test, in fact the severest test of his professional life, as he must then know and put to practice not only the principles of breeding but that which he has learned generally. The general principles must be applied to individuals. He may be loaded down with beautiful theories, in fact a very graduate, but now these theories with all their ramifications and exceptions must be applied to practical life, form and substance. He is like the young man just graduated from college and entering active business; that which seemed smooth and plain to be looked at, when it comes to be worked out, is more or less puzzling. There are so many variations in forms and conditions of the real animals as compared with the ideal ones, that he is constantly on the rack, and in this puzzling period, if he is not cool and level-headed, he will become desperate and reckless. This latter condition must be avoided, and cool calculation and close study rule the hour. We will try and aid him a little by again calling his attention to the questions of uniformity of form, substance, disposition and line breeding. Make this a general rule of action. If there be in either male or female weak points combat them with the strongest currents of an opposite character that can be marshalled. Look first to strong constitutional qualities, and let the finishing touches or fancy points give way before those that fix stamina, strength and profit. After the constitutional points are looked after, turn attention to style. If you have but one boar, get in him the best combination of points possible, and then mate with him only such sows as will strengthen rather than neutralize his good points. But all should not be risked upon one boar unless he is a veteran, tried and true. If the boar be young, and has nothing but probabilities before him, don't risk him too far, or to use a homely expression, "don't put all the eggs in one basket." Try several baskets, or probabilities. If you have made a successful mating the year before with two animals, give them another chance rather than try a new match. Don't work your boars too rapidly; better let the sows wait until another heat. Keep the boar up by the choicest feed, milk, eggs, oats, a little corn, wheat and oil meal. Do not let him serve a sow if he is not feeling well and is not active, strong and vigorous. After the sow is served, remove her to some quiet, and if possible, dark pen, until the period of heat has passed, and feed her generously. Do not couple two inferiors.

CARE OF THE BOAR.

The boar pig, having been selected and purchased, has arrived at home. Possibly he has had a long journey by rail, and comes in a box, where he has been several hours, or days. The first thing to do is to give him a drink of water, say a pint of pure water; if the weather is not too cold, wash him off carefully with soap and warm water, clean him up good and rub him dry with a dry towel; then you should give him a pint or quart of sweet milk, and put him in a nice, clean pen, with plenty of good bedding; give him a little corn meal or shorts mixed with water or swill so as to wet it thoroughly but yet keep it stiff; don't give him much, not more than a pint, and give it to him often for a day or two, until his fast is gradually broken and continue the milk twice or three times a day; it will brace him up and whet his appetite. Have the pen strongly made and sides high enough so that he can not get out, as he will likely try to do so, and a little negligence in fence or pen may cause him to become breachy. Keep him quiet a day or two; if he shows a disposition to be restless and tramping about he is lonesome and homesick. Almost always pigs are taken from among a lot of his mates and shipped to a new place, and if kept away off by himself, he will squeal and walk around, showing every evidence of lonesomeness and "a want to go home" manner that is unmistakable. If such should be his condition it is better to put a young barrow in with him and feed well, especially give him plenty of milk, it will start him to thriving and make him contented. As soon as he gets accustomed to his quarters, let him out into a small lot where there is grass and where he has a chance to run about. Then give him all that he will eat up clean, of oats and corn ground together or shorts, and if possible, give him milk twice a day. Milk is nature's mixture for the young and growing animal, and it is a better compound than man has been able to devise. If you have apples, give him some of them occasionally, and choice slops from the house. Curry and brush him often; this will operate in two ways: first, it keeps his skin lively and healthy, promotes circulation of the blood, and makes his hair nice and lively, and secondly, it makes him gentle, contented and tame. A lot should be

provided for him of not less than half an acre, and he should be allowed to root the ground; it affords him the best of exercise, because it brings into active play every muscle of his body and especially in his neck, back and legs, and at the same time affords him amusement and an "occupation." Have the lot surrounded by a good, strong, high fence, so as to prevent his getting out. Should he once be able to break out, it will cause him to become breachy and troublesome. His sleeping apartment should be placed in the lot or open into it and made warm and comfortable. His feed should be of muscle rather than fat forming material, and there is no better food for the boar pig than milk, ground oats or soaked oats, and shorts with a small amount of oil meal. After he has arrived at maturity, oats and shorts in moderate quantities are the best food; continue to curry and brush him; it will keep him gentle and kind. When his tusks become large enough to project from his mouth, or in any way become dangerous, remove them by breaking or snapping them off with a pair of blacksmith's pinchers. To do this easily, catch him in a hog-trap, shown elsewhere, and hold him firmly, remove his tusks, and let him out. Some breeders pull the tusks out, some knock them off with a hammer, and still others file them off, but the easiest and quickest way is to take the large pinchers spoken of and set them tightly on the tusk, give the pinchers a tight squeeze and a slight turn to one side and the tusk breaks off easily.

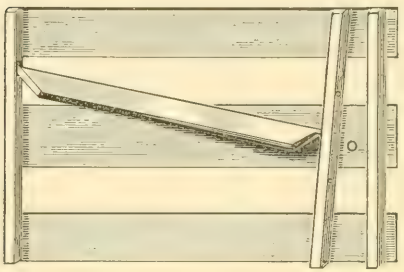
In breeding never take him out of his lot, but bring the sow to him. It is better to have a small enclosure inside of his lot, which should be fastened up, and covered over, with an opening outwards. When a sow is to be bred, shut him out of the small enclosure, and drive the sow in, then let the boar in with her; after service drive the boar out and let the sow remain until she can be taken to



BREEDING-BOX.

some quiet place. It is also a good thing to have a breeding-box, constructed as follows: The box is five feet long, two feet seven inches high, outside measurements. It is made of three-quarter inch stuff, of

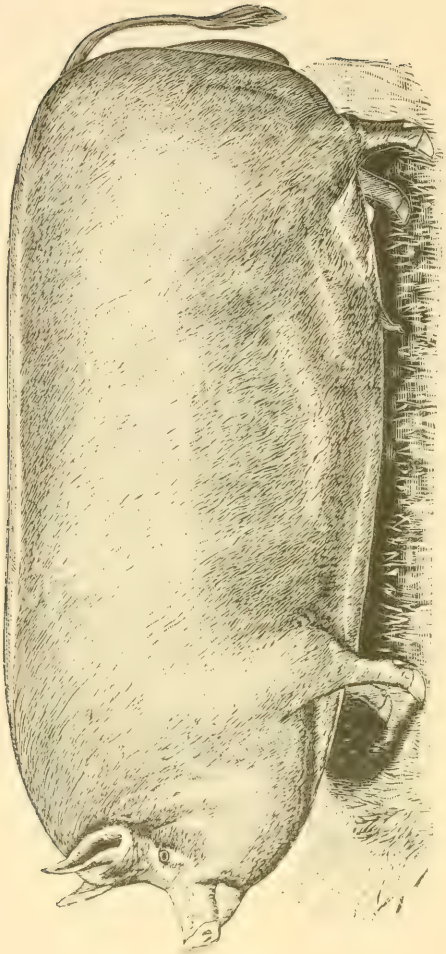
whatever lumber you wish to use, and is built the same as you would make a shipping-box, only it has no top. The up-rights are two-inches square, and there are six of them, three to each side, the end ones being perpendicular, while those marked "C" are on a slant; the space between them at the top is three inches, while at the bottom it is four and three-quarter inches. This is so arranged that the foot rest can be adjusted to suit the sow and boar. This foot-rest, marked "A," in drawing, and of which we present a special cut, is the most important part of the box. In its construction you take a two by two inch strip, round it to fit the holes in strip "C," and make the shank long enough so that you can slip it in towards the back of the box so as to loosen it in front. The holes in front slip for foot rest should be mortised square and the ends of tenons on bar "A" made square instead of round, to prevent turning. The front should be square and fit in a hole in front upright, which should be made nine inches from the top of the box. On this two-inch piece you nail a board six inches wide and round it at both ends as in cut. This board is used as a foot rest and also to prevent the sow from moving sideways. Should you have a very small sow you fit the board as in cut: if this space is too narrow for another sow, you take the foot-rest out and turn it down which gives six inches more space. The holes in upright "B" is to enable you to adjust it to the heighth of the sow, also the size of the boar, placing him in a natural position, regardless of the difference in the size of the sow. The piece "B" is a six-inch board which slides back and forward, and is used as a chin rest. It is one foot from the front end of the box and is two and one-half feet long. These two rests are the important features of this box, and we think the construction is plainly indicated by the two drawings.



This box can be kept in the small enclosure above mentioned. The boar should be early learned to use the box, as it holds the sow still and prevents the boar from being strained or injured during service, and when the boar becomes large and heavy the box is almost indispensable.

There should also in summer time be a basin constructed of stone, brick or wood, where water ought to be kept, say four inches deep, so that he can bathe himself frequently.

In addition to the bath tub, he should have a trough with pure water constantly in it, where he can get a drink whenever he feels like it. In summer, if he does not have grass in his, lot feed him clover or fresh



cut grass or weeds from the garden, and in winter give him turnips, beets, or cabbage, two or three times a week. In one corner of his pen place a box and in it put wood-ashes and salt; let the salt bear about the proportion of a tablespoonful of salt to a half gallon of ashes. Feed charcoal once a week.

Don't put a ring in his nose; let him root; the lot will not be handsome, but the boar will. The boar should have kind, generous treatment, such in kind as is usually given stallions, and it will be found to be more profitable than if given to other kinds of stock.

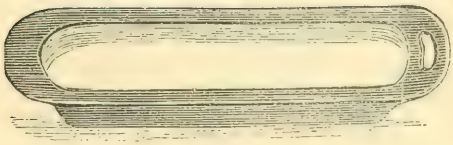


Fig. 3.—ANOTHER IRON TROUGH.

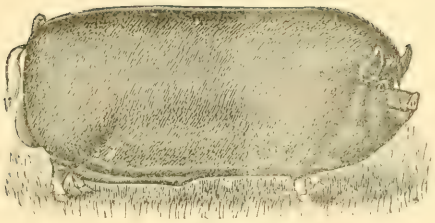
CARE OF THE SOW.

Having selected your sows, and if purchased away from home they come in boxes and on train, wash them off nicely, and give them a little water and feed. If purchased of a person at a distance, learn at time of purchase whether he feeds cooked feed, sour feed, or what kind and condition of food, so that when they arrive you can give them for the first week like or better treatment than they have been accustomed to. At first feed small quantities and often; as the better way to break the fast they have been subjected to on their trip, put them in a pen or small lot until they get rested, strengthened up, and regain their former activity. Confinement in boxes for a day or two or three days, has made them sore and numbed their limbs, so that a week or more is often required for them to feel all right.

The feed they have been used to is best continued until the purchaser has time to gradually bring them around to a new and different system of feeding. If they are young sows, weanlings, or under one year old, they should be fed liberally, in fact all they will eat, of oats, shorts, barley and corn, and allowed a large lot or pasture to run about in. Should it be winter season, give some green food, such as cabbage, turnips, raw potatoes, two or three times a week. In short, feed plentifully at regular periods, three times a day, and crowd them along as rapidly as possible, so that they may have as much size and strength as possible when the season for breeding comes on. There is no danger of a young, growing sow becoming too fat if she has ample room for exercise. If you select from your own herd young sows for breeders, separate those intended for breeders from the others and give them special attention, variety of food, and plenty of good, clear and wholesome water—the object being to develop them and make them as large and strong as possible before coupliug.

If the sow is an aged or matured one, feed sparingly of grain and let her have the run of a good clover pasture during summer, and provide an abundant supply of pure water for drink. Also provide ashes and salt in same proportion as for boar and have it at all times accessible. The mature sow should be kept in good stock order, not fat. All

sows should be kept gentle and accustomed to the presence of the person who cares for them, and scratching or brushing them occasionally will accomplish this result. Never dog or beat them. Handle, and if necessary to drive them, do it carefully and slowly. With a hog, the old adage, "less haste and more speed" is peculiarly applicable.



FEED AND CARE OF PREGNANT SOWS.

If the sows be matured ones, that is, two years old and over, they should be fed sparingly of corn and have an abundance of bran; the latter does not fatten, but it supplies bone and muscle, making material for the development of the young. We have as a rule, especially in winter, given sows about an ear of corn each twice per day and allowed free access to a trough of dry bran. Turnips, beets, carrots, cabbage, or raw potatoes once or twice a week is good for them. Clover hay, if cut and prepared so as to keep it a green color, is good, and it is still better if steamed or even soaked in water a few hours before feeding. All of the above are good food for the sow, and relished in winter. Oats are desirable food, although rather expensive. Apples are good, but in this part of the country rather expensive; and pumpkins, if fed moderately, are a good article of diet, but if fed exclusively and too liberally, are likely to produce abortions. A crop of artichokes is one of the best winter foods, and is of very little trouble, as the sows can be allowed to dig them for themselves—the rooting is good exercise and the tubers healthful.

When roots are fed the sows should have their regular rations of corn daily, say two or three ears for each sow. The sow should not be allowed to get fat nor too poor, but should be kept in medium stock order. They will in that condition take plenty of exercise and keep healthy and vigorous. When the snow is deep, the sows should be kept up, especially if the weather is cold, as the dragging of the belly through the snow is apt to freeze the teats and impair the udders of the sows and has a bad effect on the embryo pig, as the snow makes the belly cold and impairs the vitality of the young.

During summer months the pasture should be abundant and the sow have at least one ear of corn per day, and the water supply must always be abundant.

Young sows, usually called gelts, or gilts, should have the same variety of food, but more corn and shorts. They should have all they will eat up clean, and be pushed forward as rapidly as possible to attain as much size as possible before farrowing. They must have food,

not only for their own growth, but that of their young, and it should be of such character as will best attain the desired result. Shorts, or middlings, as it is sometimes called, mixed with a little oil meal; ground peas and oats make a splendid food, together with a liberal supply of roots and bone meal. Do not be afraid of getting them too fat, if they have room for exercise. Crowd them forward from the time they are bred until about the time of farrowing.

Provide at all times plenty of pure fresh water. *Don't forget the water, especially in cold, freezing weather; see that they get it plentifully and often.* All sows, old and young, should have dry, warm, clean beds, and not more than two or three should be permitted to sleep together. If a number are allowed to sleep together they pile up and are apt to receive injuries that result in abortions, and in addition to this, they will get warm and sweat in their beds, and when they go out into the cold air, take cold and engender disease. Sows can soon be learned to go to separate pens for the night, and the breeder should see that they do, and to secure such results it is best to fasten them in at night, one or two, and not more than three in a place. It is better that each have a separate sleeping apartment and be required to occupy it. They should have a small amount of bedding, which should be changed once a week, or oftener, if it becomes wet or dirty. Dirt floors, with about six inches of sand makes the best bedding, and on this may be placed a little cut straw, corn husks or corn stalks cut up short in a cutting-box. Two animals sleeping together require less bedding than when each occupy separate pens.

Ashes and salt should at all times be accessible, and once or twice a week charcoal should be liberally supplied. It absorbs and neutralizes the acids of the stomach and carries off all offensive collections in the stomach and bowels. Its value is not sufficiently appreciated by breeders; it is better than the patent nostrums, or the mixture of antimony, sulphur and copperas with the salt and ashes. *Don't neglect the charcoal.*

Another important thing is to brush and curry the sows often, say two or three times each week. It keeps the skin lively and makes the sow gentle, and they take kindly to the presence of such a humane keeper.

FARROWING TIME.

We submit a few suggestions touching the management and treatment of sows just prior to, and during farrowing. All breeders doubtless realize the importance of proper attention at such periods; if they do not, they can not learn the fact too soon. It is a time when brains of the practical variety are in demand. We are fully aware, however, that it is much easier, especially in bad weather, to direct what should be done, than it is to turn out in the mud, sleet and snow, and do what is directed by others or your own judgment; yet success is only attained by prompt, intelligent and untiring effort, and the result will fully compensate for the trouble. Persons who do not want to get into the mud and look after their stock, and either do, or have done, that which their interests demand, had better quit breeding hogs, as they have mistaken their calling. Observation and experience teaches us that animals recognize quickly the presence, voice and touch of their breeders and keepers, and they are equally sensitive to the approach of strangers. It is, therefore, at all times important to have domostic animals tame and confiding. It tends to improve their disposition; they are more contented, grow faster, and do better. But at such times as suggested at the beginning, it is almost indispensable, as they are not in condition to be beaten, thumped about, or raced around the lot, without constant danger to them and their young; besides the breeder does not know the day nor the hour it may become necessary for him to assist them in the trying ordeal of maternity, and if they are not previously gentle, and accustomed to his presence, voice and touch, he may find it impossible to get near enough to aid them.

If they have been kept gentle the breeder will have no trouble. If the breeder is not on close speaking terms with his herd he should lose no time in forming an acquaintance. Don't wait for an introduction, but get right down to business. Commence carefully, however, for the ramparts of confidence can not be taken by storm. Imitate the book agent, tree peddler, lightning-rod cuss and insurance agent, in persistence and adroitness, but there let the imitation cease and deal candidly, honestly and fairly with the sow, and she will soon be a confiding friend.

We will next consider the pen, that should be for her use during the period under discussion, and in selecting its location gratify as far as possible the instinct of the animal, which is seclusion and quiet.

Doubtless all have noticed that when opportunity offers, the mare, cow, ewe and sow, as they near the crisis of reproduction, will invariably separate themselves from their companions and select a quiet, secluded, dry and comfortable location, where they may be unobserved and unmolested, (The sow being the only one, however, which makes a bed, or special preparation.) This instinct means something, and suggests to thoughtful minds a subject worthy of inquiry and attention. It may be suggested that such action is prompted solely for the preservation of their young, and doubtless this has its influence, but this is not all, for it is rare at such times to see the mother or young disturbed or annoyed by her companions, even though in crowded quarters.

Is it not rather an instinct dictating to the maternal mind the necessity for absolute quiet and seclusion, an honest effort to get as far as possible from the confusion, bustle and noise of active life. At such times the nerves of the mother are wrought up to the highest tension, and noise and confusion grates harshly on the maternal ear, producing nervousness, fever, and often death. In this connection, it may be well to call attention to the fact that at least three-fourths of the young are born during the night, and thus Nature in a quiet and determined way says, "stillness and the seclusion of night are beneficial." Taking these hints, let the breeder gratify the promptings of such instinct and the demands of nature, by as far as possible selecting a place for the pen where the expectant mother may be quiet and secluded, protect her from noise and bright light, and have the pen clean, dry aad comfortable. We have frequently noticed when sows were in close proximity, as in our large hog-houses mentioned in another place, that the sows were more or less irritable, nervous and restless; they would get up and down frequently, tramp on their pigs, bite and gnaw their pens, and in many ways manifest their dislike of their situation. All these things impressed us that quiet seclusion for the sow is an important element of success.

Having selected the place for the pen and lot, complete it before she is turned in, so that there will be no hammering and pounding to annoy and frighten her. She should be placed there a week or ten days before she is "expecting to be sick," so that she may get accustomed to the surroundings. After she has quietly settled down in her new quarters, get inside the pen frequently and scratch her, and at the same time talk to her in a low, kind tone of voice, but be careful you do not hurt or scare her. Be patient, gentle and kind, and you will be a welcome visitor. You should have the date of her service, and by adding one hundred and twelve days, you can approximate her time and know about when to look for new arrivals. There are, however, infallible

symptoms which will tell plainly that "things are about ready for the movement." About twenty-four hours before farrow, the udder, or bag, will become hard and hot. A few hours, rarely exceeding twelve before she farrows, milk can be drawn from the teats; there will also be observed on each rump a sunken place, or hollow on either side of the spine. These signs are infallible, and "indicate business." Soon after this she will begin to prepare her bed, and if material has not been already supplied, give her a sufficient quantity; don't try to fix it —she will do that better than anybody. We say a sufficient quantity, and as that depends upon the size of the pen and sow, we can not be more definite. The bedding should be short stuff rather than long straw, because it is more comfortable for the sow and pigs, and the pigs less liable to become tangled and thrown down and laid upon. A bran mash is all the food required for twenty-four hours before farrowing. Don't forget to provide her plenty of good water to drink, and so arranged as to allow her access to it at her pleasure. She needs an unusual amount, because she is nervous, is taking more exercise than usual, and carrying and placing the bed with her mouth creates thirst. We have seen sows under such circumstances drink quite frequently while actively at work at bed-making.

After her bed is satisfactory, she lies down, usually on her belly; she will remain in this position, with her feet under, as a rule until the sack containing a lubricating fluid is broken in the womb and begins to ooze out. Until this fluid appears pretty freely, active labor pains or struggles need not be looked for. This fluid will usually appear one to three hours before the pigs. As her strong and earnest pains come on, she will change position and lie on her side, and, if everything is all right, the "coming events," squealing for pedigrees, will soon appear. If she rolls about, gets up and down often, lies on her belly, and seems restless, it usually indicates something wrong. In such cases the usual difficulty is a wrong presentation. This can be determined by inserting the finger as she is straining, and if the side of the pig is felt, it will be necessary to push it back. Get some one who has a small hand to grease his hand and wrist, and slowly and carefully insert the hand, press the pig back and start it end first, and it makes but little difference which end, as it will be noticed that if one comes head first, the next to follow will come tail first, and so on, each subsequent one reversing the position of the one which has immediately preceded it.

With young sows we prefer to bring the first pig hind feet first, as we think it the easier delivery. Now that we have given some directions in the case of trouble, allow us to say, however, don't be in a hurry about taking a hand, or exhibiting skill. In most cases the sow will do better if let alone. If the weather is severely cold, it is best to be on hand, and as each pig comes, wipe it dry with a woolen cloth, break the navel string long and tie a knot in it to avoid bleeding and waste from

the pig. Next, get the little stranger to suck as soon as practicable. If, however, the weather is not severe, stand back and give the old girl a chance to show what she can do by herself. When all have arrived, the afterbirth, or pig bed, will pass from the sow. At this stage all the fine-spun theorists say remove it at once, and we usually follow that course, but have doubts as to it being best. Nature has implanted an instinct in the mother to eat it. This may be an act of cleanliness, or it may be a wise provision of nature to preserve the health of the mother or both. We confess to have puzzled ourselves considerably over this subject, and have never known bad results to follow when it was eaten by the sow. In such cases it furnishes a means of purging the sow mildly, keeping the bowels open, and we are inclined to the belief that it is better to let it be eaten than removed. We know in one case in our experience that it always acted well, and prevented the sow from devouring her young. We had a sow called Bessie Crow; she was reasonably tame and gentle, except when farrowing or while pigs were young. She persisted in being cross and fierce. In the early spring we kept her in the hog-house during farrow, and although we dare not enter the pen, we removed the afterbirth promptly by using a long-handled fork, and in less than forty-eight hours she ate up every pig. In the summer she farrowed again, and being allowed the run of the woods and left to shift for herself, she raised a good litter. After that she was unmolested, and was allowed to eat her afterbirth and did not touch her pigs. The dose seemed to satisfy her appetite for "blood and meat" and she remained quiet.

If the sow shows no disposition to eat the afterbirth within two or three hours, remove it, as it is an indication that her appetite does not call for it. We have known several instances where the sow would not touch it.

One other suggestion, which may be of value to young breeders and some old ones: The navel-string that remains attached to the pig, is usually eight to fifteen inches in length, and seems to be in the way of the youngster, but do not attempt to cut it off; usually the sow does this within a short time, by chewing it off, about one inch from the pig's belly. This process is better than you can perform it by cutting, because to cut it would in all probability cause severe bleeding, while chewing and mangling the ends prevents bleeding, hence you will observe that nature directs the mother wisely. If she does not chew it off, it dries up very rapidly and will soon drop off. The first time we noticed the sow chewing at the navel-string we were alarmed, and thought we had discovered why sows sometimes eat their pigs, viz.: that in that way they get their taste of flesh and blood, and cease not until the pig is devoured. We concluded however, before jumping at a conclusion, to keep quiet and await developments. We noticed that as soon as she finished one, she rooted around another, and so on until all

had received attention. We also noticed that during the "dressing" the little ones held still; in other words, old and young seemed to understand that it was in the regular course, and we had learned something. After the sow laid down we examined the piggies and found the job almost perfect. The end of the navel-cord was crushed and mangled and no blood was escaping. We then reasoned out that a cut with a sharp instrument, such as a knife, would in all probability bleed freely, and besides an inexperienced person might cut it too close and invite rupture, while the sow, directed by nature, has left the cords safe. The chewing prevented bleeding, and the thickness of the lips of the sow kept her teeth from cutting it too short.

If the sow is gentle, throw out all portions of the bed which become wet and soiled, and sprinkle copperas (pulverized is best) over the bedding. Dust the moist and damp pieces on the floor with coal ashes (do not use wood ashes as it will be likely to make the sow's teats and pigs' mouths sore), or dry earth, to absorb all the moisture and odors. This will keep the pen sweet, pleasant and healthful. After cleaning out and using the disinfecting material, put in fresh bedding as quietly and carefully as possible.

Next, see if the little fellows are getting a supply of milk from the mother. If they look full and sleep quietly, you may rest easy on that point; on the contrary, if the hair stands up, or points forward, and they look gaunt and stagger about and droop down as though the world was all wrong, they need attention promptly. The first thing to do is to put them up to the teat, steady the head by putting the hand under the chin, allowing the thumb to pass up one side of the face and the fingers on the others, and with the other hand take the youngster around the body, and it will be under pretty good control. Handle it easy and gently, don't hurry it, or try to push its head down by placing the thumb over its nose; if this coercion is resorted to, the operator will learn that the proverbial stubborness of the hog is born in it. When piggy gets a good square taste he will need no further encouragement. He will "get there" thereafter. Frequently you will hear one or two and sometimes a whole litter *squeak* instead of squeal; they are usually frail and have but little vitality, and must have immediate attention. That squeaking sound once heard, will always afterward be recognized promptly. The squeaker is usually dumpish, hair stands up, he lies down on his belly, shivers, feels cold to the touch, is run over by his mates, and if turned on his back can hardly get over, and all his movements indicate that he has about given up. Take all such customers, wrap them up in a warm woolen blanket or sheep-skin (turning wool side in), give them *hot* milk with a few drops of strong coffee or whisky in it, and if they rally within a half or three-quarters of an hour, put them up to the sow and try to induce them to suck; if they suck vigorously they are safe, otherwise the chances are largely

against them. If all the litter are squeaking, it may be that the sow's bag is caked and inflamed, and the pigs are simply starving. To determine this, feel of her udder, and if it is very hot, dry, hard and large, the breeder may be sure that that is the principal trouble. Another symptom is soreness or tenderness of the bag, so that she flinches when it is pressed or when the pigs attempt to suck. If the attendant discovers the bag is caked the quickest relief is usually secured by bathing the udder with hot water; apply it as hot as the sow will stand it; after bathing it awhile, take a woolen cloth, wrung out of hot water, and apply to the udder. This treatment is usually sufficient; if, however, it does not accomplish the purpose, wipe the udder dry, and apply all over it, except for an inch or so about the teats, an ointment of turpentine, one part, and lard, two parts. Rub it in well, and if it is warm so much the better. We have never known this last remedy to fail; be careful not to put on hot cloths after the ointment, for there is great danger of blistering by so doing. If the udder is badly caked it may be necessary to feed the pigs a little new milk from the cow. This is easiest done by warming the milk in a quart flask, and place a quill or stiff straw wrapped with cotton cloths until it is large enough to fill the neck of the flask, and the other tapering off like a nipple, or still better, get a rubber nipple, same as used for children, and fasten on the bottle, and let the pig work at the bottle. This is better than feeding with a spoon, as piggy learns that his living must come by sucking instead of drinking. When fed any length of time with a spoon, we have had trouble in afterwards getting them to suck the sow. But don't feed at all unless absolutely necessary, as you want to keep the pigs tugging at the sow as much as possible to assist in drawing the inflammation from the udder. If the sow appears all right after pigging, give her milk and boiled potatoes in small quantities, three or four times per day, with an ear of corn occasionally, changing to small feed of shorts, mush, cooked potatoes, a part of a head of cabbage, gradually increasing the amount of feed until you reach full feed about the fifth or seventh day. If after farrowing, she appears restless and strains when attempting to have a passage, she is either costive, unable to pass her urine, or has not cleaned herself properly. In such cases, particularly the first and last condition, boil flaxseed and give in milk, in small quantities, say half-pint of the boiled flaxseed in a quart of milk. If the difficulty seems to lie in her urinary organs, she will show weakness in her back, as well as restlessness. If such symptoms appear, give watermelon-seed tea or spirits of nitre in milk, or a few drops of turpentine, say a half-dozen drops, in a quart of milk. If the sow does not seem to be doing well, and you are are unable to determine the cause or seat of the trouble, give her the turpentine and milk—it will not hurt her, if given in the quantity indicated above—and it gives tone to all the organs of digestion and secretion. A little sulphur

in mush or shorts, mixed with milk, is excellent for ordinary ills of swine. Occasionally you will find that the sow eats well, appears all right, but she is constantly scratching herself; this indicates that her blood is out of order, and in such cases feed her sulphur once a day or oftener for a week, and curry her vigorously with a curry-comb; if this does not allay the itching, take coal oil, one part, lard, two parts, carbolic acid, one twentieth part, and sulphur enough to make a thick ointment, and apply with a woolen cloth, rubbing it in well all over her body, except the udder. When the sow has this trouble do not delay action, else you will have sore ears and tails on the pigs, and possibly diarrhœa or scours. Should the pigs' ears and tails become sore, apply an ointment made as follows: coal oil, one tablespoonful; lard or tallow, half teacupful; twenty drops of carbolic acid, and a heaping tablespoonful of sulphur; mix well. If attention is not given promptly upon the appearance of sores on the tail, it soon comes off. This is due to the sore and inflammation impeding or destroying the circulation of the blood in the tail, causing lack of nourishment of the parts beyond the sore place. The blood vessels that supply the tail lie in the skin and slight muscles and are few and small, hence when the skin and closely adjoining muscles of the tail become sore or inflamed, the circulation of blood in the tail is stopped.

If the sow gets too much feed by accident or lack of care on the part of the feeder, she may be speedily relieved by giving a quart or two of charcoal. It will cleanse and tone up the stomach of the hog better than anything else. If the pigs get the scours, the fault is generally in the condition and feed of the sow, and sulphur fed with scalded sweet milk and wheat flour to the sow, is the best remedy, being at the same time careful to keep the pen clean and free from noxious odors by dusting with ashes, dry dust and copperas. If possible let in the rays of the sun on the bed, and if the weather is not too cold, air the pen for an hour or two in the middle of the day. Have a pen and lot so arranged that the sow can go out in the fresh air and move around: it will do her good and make her more contented with the situation. We have had some experience in the use of artificial heat for pigs, and on the whole are not pleased with it, unless it is of low grade and uniform. A pig kept by the fire for a few days and then removed to a pen without fire, suffers from cold and usually diarrhœa, just the same as will be produced by sudden changes in the weather. In nine times out of ten, if the pen is made good and warm, and not over eight feet feet square and six feet high, the animal heat of the sow is sufficient and better than a poorly constructed pen with a stove. We prefer a small room adjoining the pen, in which to put the stove for the comfort of the breeder, and rely upon a warm pen and animal heat for the sow and pigs; unless the house or pen is so arranged that the heat will be steady. A horse-blanket laid over the sow and pigs in cold weather is excellent.

FEED AND CARE OF THE SOW AND PIGS.

The feed and care of the sow and pigs during the period of nursing is of vital importance. Mistakes or neglect during this period are hard to correct and overcome. There exists a difference of opinion, or of practice, in the manner of treatment among reputable breeders. Some pay but little attention to the pigs until after they are weaned; others crowd them from and after the first week of their lives, and never let up. We think the latter the cheaper and better plan. The former chapter brought us to the point of delivery and safety of the family, and now we will "continue treatment" for the family.

The sow should be kept on full feed until the pigs are weaned. If possible give her a variety of grain and slops and allow her as much freedom of range as practical. We prefer blue-grass pasture for sows and young pigs, especially in the spring.

While the pigs are young, and until they are six to eight weeks old, keep them up in a dry lot until ten or eleven o'clock in the morning on clear days, and in rainy weather all day, as running about in the wet grass in the early morning or in rainy weather, will likely induce colds and diarrhœa, and sores and lumps on the belly and inside of the legs where the skin is tender.

The food of the sow must of course be governed by circumstances. Corn in the ear and a slop of shorts and water, are easily prepared and constitute a good diet, producing a large flow of nutritious milk. If you can add to the "bill of fare" skimmed milk, boiled potatoes, etc., it will be an excellent addition. Whatever you do feed, give it three times a day, and do not give any more at a feed than will be eaten up clean. It is better to let them squeal a little than to leave some uneaten. We have found corn, oats and rye, in equal parts, ground together, mixed to the consistency of thick mush, and allowed to stand six hours before feeding, an excellent food. The corn furnishes the fattening qualities, and the oats and rye the muscle and bone forming material. If corn is fed whole, it is better to soak it in water twelve hours before using. The water so used after the corn is taken out can be utilized in making the slops. Fresh water should be used each time the corn is put

to soak. Fresh blood from slaughter-houses, if accessible, is valuable to mix with ground feed in slops. House slops from the kitchen, if accessible, should always be utilized in mixing shorts or ground feed. There should always be free access to pure water. The food should be put in troughs on plank floors, or if soaked corn is fed put it on board floors, placing it in piles around so that all can have a chance; as warm weather comes on, shade over the feeding place is beneficial. Don't allow more than five sows and their litters to feed together, and it is still better to feed each "family" separately. Put a little crude carbolic acid into slops—it promotes health.

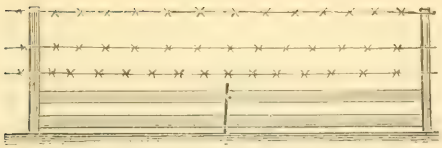
Occasionally give sulphur in the proportion of a teacupful to a bucket of slop. It is a good idea to smear the troughs with pine tar, if there is any coughing in the family. Avoid muddy or dusty places for feeding. Clean the trough each time before feeding. Keep your buckets and slop barrels clean and sweet. The pigs will begin to eat at about two weeks of age. The same kind of food may be given the pigs as we have mentioned above, but we prefer soaked corn in moderate quantities and slops, and if possible give them skimmed milk often. It is the best to place the food for the pigs in shallow troughs, in small pens, so constructed as to admit the pigs and exclude the sows. If a large number of pigs feed together, make several pens and have small openings in some of them and larger ones in others; this will put pigs near the same size and age together. Slats should be nailed or secured across the troughs, every five inches, to prevent the pigs from crowding each other and lying down in the trough.

If you are breeding and raising pigs to ship and sell as breeders, we prefer raw feed for the following reason: If the pigs are fed cooked food and sent out, nine times out of ten, the purchaser will feed raw food. In such case, the pig will not eat heartily of the raw food, nor will it so readily digest uncooked food. Its appetite and digestive organs do not readily accept the harsh change and the pig will decrease in flesh and seem to, and really does go backward, when it should be doing its best; and the result is a disgusted purchaser and a stunted pig, that will probably be permanent with the purchaser, and of several months loss of valuable time to the pig; while on the other hand if you feed raw, and the purchaser cooked feed, piggy takes hold as if he had always been used to such treatment, and he grows rapidly, and the purchaser and pig are both pleased and profited by the change. We have thoroughly tried both cooked and raw feed, and we give the result of several years' experience, when we say to the breeder don't feed cooked food to the pigs when you expect to sell them as breeders. On the other hand, we are fully convinced that for fattening, it pays to cook the food.

Another thing, do not crowd your shippers too much, else if the purchaser is not a good feeder, piggy will not keep up appearances; this

last caution is not much needed when large numbers are raised, as you can not make them grow too fast when you have a great many to look after.

We have noticed that the breeders of the Miami Valley do not begin to feed very heavily until July and August, when the pigs are thin and small of their age; after that, they administer slop and soaked corn, when the pigs show the unusual attention by first developing enormous bellies, the ends gradually coming up, and by fall, when most of their shipping is done, the pigs show up nicely. We remember that for a long time it puzzled us, and we said to ourselves, "It is strange that these old experienced men do not crowd their pigs from the start," and wondered if theirs was not the better policy, but we found it was caused by lack of time during the earlier months, when farm duties were pressing, for we soon learned to look in the orchard or some quiet place, where usually is to be found a favorite sow or two, with litters, that indicate *care, sweet milk and extras*, calling for fancy prices. These privileged few were abreast of the times, and proved the benefits of a liberal diet from youth upwards. We prefer a steady, healthy, uniform growth, rather than the forcing or starving process.



TREATMENT OF SOWS AFTER WEANING PIGS.

After the pigs are weaned, the sows, if young ones, that is, under two years of age, should be turned upon a good clover pasture and fed liberally with corn all summer, to grow and develop them. This course is necessary to get size, strength and stamina, as well as to spread them out and show up their good and bad points, to enable the breeder to determine whether to keep them over another season or as permanent breeders.

The young sows, which are to be left, should not only have suckled well and raised good pigs, but should show that they have the capacity to grow and develop into good sized, vigorous, active, and handsome animals, and grass alone is not sufficient for such a test. It is folly to keep sows that can not be made to show up a scale of sixty-five standard points, and we would put the mark higher rather than lower. Nothing is more attractive on a breeding farm than a fine lot of uniformly active, smooth, vigorous, good sized breeding sows, that are able to demonstrate by looks and actions that they are all worthy of the high position assigned them as mothers in the herd.

Occasionally, and we may say frequently, will be seen poor, small, inferior looking sows, that have large litters of nice pigs. Such sows may have such looks because they have not been properly developed; or it may be that they have within them a lack of vigor and force of character that permits the boar to stamp his impress without hindrance from the sow; or that they have some good currents, which united with a particular sire, produce good results. But the first of the three above described is the only one that can be depended upon; the other two are uncertain, and their own defects and lack of form are likely to crop out in their grand or great grand-pigs, especially if they should have in their blood a union of other poor elements. In other words, such sows, that can not show up by development that they have good form and size, had better go to the slaughter-house, and thus end their careers. If left as breeders, they will be stumbling-blocks that are likely to disgust and discourage some purchaser of their progeny, and bring disgrace upon the herd. If a sow has once been developed and shown herself

to be a good one in size and form, she will still carry around her the symptoms of excellence that can not be wholly destroyed by poverty of flesh. "The scent of the roses will cling around her still." The head and ear will grow even upon poverty flats, and unless the body, by generous feed, is made to keep step during the period of growth, the former will reach a size and shape out of proportion with the latter.

Don't take the poor young sow, that is nearly exhausted by the drought of nursing a litter, and turn her upon grass food, without grain, and expect her to recuperate and grow to matronly beauty. It never has and never will be done, and the breeder who expects to succeed must give the sow a better show than a clover pasture. Mature sows—those that have been developed—will do well enough upon a clover pasture, and we would recommend such treatment for them after weaning pigs, until the pasture gets short, when a little grain, say an ear or two of corn each once a day, will keep them in good breeding order.

If the sow shows up well and does not do well with her first litter, do not discard her, she may do better next time. Her failure may be the fault of the boar or his lack of condition at the time of such service. Give her a fair trial, after she is two years old, and then if she fails, feed her off. After a sow becomes six years old, unless she is an extra breeder and good looking, feed her off. After she is two years old, she should raise at least two litters each year. Do not discard a sow because she does not have large litters. Five or six good pigs are better than ten poor or ordinary ones. Quality is better than quantity.

DISEASES WHICH ATTACK YOUNG PIGS.

There are a number of diseases which attack young pigs during the nursing period that seldom trouble them after arriving at the age of four months. We will discribe some of them, and give the manner of treatment:

Scours or Diarrhœa—Is the most common trouble with your young pigs, and it is the result of several causes: Over, or improper feeding of the sow; cold, damp beds or bedding; running in the grass when the dew is on; sudden changes in the weather; sudden changes from a warm, dry pen to a cold or wet one; impure, unsound, or musty food; insufficient food or water, etc. When the pigs are young, in most cases the remedy must be administered through the food given the sow, but in order to do this intelligently you must, to the best of your ability, remove the cause as well as apply remedies. If it is caused by over, or improper feeding, musty food, stale or sour slops, correct by giving sound feed and sweet scalded milk, or milk and eggs stirred up together and fed to the pigs. Frequently it may be checked by feeding only dry corn or whole wheat for a few days. If scours results from taking cold, give sulphur in feed to sow for several days. If from over or impure feed, give charcoal liberally, and sulphur and a little carbolic acid in food. If the pigs are old enough to eat, scalded milk, thickened with egg, flour, dry corn, or wheat whole, are excellent. Blackberry roots, steamed in water for a couple of hours, taking out the roots and use the water in mixing food or with sweet milk, is an excellent remedy.

Thumps.—This is another trouble attending pig raising, and it is the result of heavy feeding. You will notice that it is always the fattest and plumpest pigs in the litter that are thus affected. We have never known a thin, half-starved pig to be troubled with thumps. The disease is the result of indigestion. The symptoms are stupor, hair stands up, ears hang limp, side thump or throb violently, the victim lies on its belly, takes but little exercise, and generally is troubled with a cough. It refuses to nurse or eat, and acts as though "disgusted with this vain world." The disease is akin to heaves in horses and dyspepsia in persons. The overtaxed digestive organs have revolted, "are on a strike,"

and refuse to perform their functions. The result is, impaired blood, soon affecting the lungs and heart, which has caused many persons to think that it is a disease of one or both of the latter organs. If taken in time, it may be cured, but once securely fastened on its victim, it is better to end the struggle at once. The remedies are, to cut down the food of the sow (if the pig is sucking), or if weaned, remove it from its companions and feed small feeds of shorts and sweet milk; give access to charcoal, and make it take as much exercise as possible every day in the open air. A drop or two of turpentine in milk is good. When it has progressed so far as to affect the heart, a few drops of digitalis, given in milk, is said to be a good remedy; two to three drops is a dose for a small pig. The attack usually comes on at from two to six weeks, although we have known it to appear at four or five months. A pig that once has had the thumps should never be used as a breeder, as it is likely to transmit the disease and a feeble constitution.

Coughs.—Pigs are frequently troubled with a cough. It may be caused by dust, colds, and foul air, or it may be whooping-cough; if the latter, it is contagious, and all of them will have it. It is rarely fatal, but it is annoying, and keeps the pigs from growing as rapidly as they otherwise would. If caused by dust, remove the cause by cleaning up; if by colds, a little sulphur or a few drops of turpentine in milk will relieve them, or pine tar in troughs, or in the food, will have a like beneficial effect. Nearly always when the herd of pigs are more or less affected, and the spasms of coughing commence when they get up in the morning or when they run and take unusual exercise, and stop and cough, sometimes fairly whooping, with nose to the ground, sides working like a pair of bellows, and terminating by throwing up or spitting something from the mouth, it is whooping-cough. Treatment: A little carbolic acid in the slop in the proportion of one tablespoonful of the crystalized fluid to a bucket of slop, or half-teaspoonful to one quart of milk; also use pine tar in the troughs.

Sniffles.—This is sometimes caused by inhaling dust, or from colds, but oftener it is the first stages of *bull nose*, or nasal catarrh; and, if so, it is contagious, and will, if the well ones are not separated, run through the herd. Symptoms: Water running from the eyes, a slight hacking cough, and frequent blowing through the nostrils, especially in the morning when getting out of bed; as the disease progresses the nose appears stopped up, and when the pig blows through the nostrils, a yellowish mucous discharge is ejected from the nose; if the pig drinks rapidly, he will stop, raise his head and appear to be choked, turn the head to one side and gasp for breath; this will be shortly followed by bleeding at the nose from one or both nostrils; the pig then refuses to eat corn or any food that requires much chewing; the roof of the mouth becomes sore and tender, and not infrequently the nose turns upwards or to one side, becomes enlarged and widened or raises on top;

the pig eats some, but dwindles along, and does not thrive on corn or ordinary food. The remedies we use are: Carbolic acid in milk, in the first stages, and bathe the nose and face with a liniment made of turpentine, ammonia, sweet oil and coal oil, in the following proportions: take a six-ounce vial; put in one ounce each of turpentine, ammonia and coal oil, and remainder sweet or lard oil; smear the trough with tar; put the pigs in a clean pen; burn sulphur on hot coals or very hot iron, or a tin pan held over a coal oil lamp, and when the pan becomes hot sprinkle sulphur on it until the pen is filled with the fumes of the burning sulphur; repeat this two or three times a week and you will probably conquer the disease. After the disease becomes so fixed upon the pig as to produce bloody discharges from the nose or turn the nose up or to one side, you can hardly conquer it. The pigs, however, will fatten readily if they are fed ground food mixed with water or slop; this kind of food being soft they eat it heartily, and the disease being local and confined to the nose and head they fatten rapidly, as though not affected.

Canker, or Nursing Sore-Mouth.—This is a troublesome disease, and if not promptly attended to, proves fatal. It may, and we think it usually does, arise from impurity in the milk of the sow, or from poison on her teats and udder, obtained by running in tall, wet grass or poison vines. The first symptoms are lumps on the sow's udder, and sometimes sores; next will be noticed blisters on the lip, tongue and mouth of the pig; the tongue and lips become swollen, and the roof and sides of the mouth inflamed and covered with deep red or white blister spots. Treatment: Catch the pig and swab its mouth out thoroughly with a solution of carbolic acid and water sufficiently strong to make the flesh upon the arm tingle. Apply it with a rag, or a small piece of a sponge, tied on a stick. A strong *sage tea* applied in the same way is good, and in addition take powdered sulphur, put it into a large straw, hold the pig's mouth open, and blow the dry sulpur in. Apply these remedies frequently, and bathe the sows teats and udder with a weak solution of carbolic acid. Keep litters that have it away from other pigs. Care, close attention, and the frequent application of the above remedies, will rarely fail to cure, if taken in time. The sow should be fed sulphur in her slops.

Sharp Baby Tusks.—These are some times found in the mouths of young pigs, and they are annoying to the sow and to other pigs; they are as sharp as needles, and the little fellows use them vigorously fighting their mates and nipping the teats and udder of the sow; they are frequently the cause of sows refusing to lie still and let the pigs suck. Remedy: Take a small pair of pinchers and pull out the little tusks, and quiet and order is again restored.

Black Tusks in little pigs are by some thought to be a source of disease and death, but we think it very doubtful; however, it is a small

matter to remove them at once by pulling out with a pair of pinchers.

Stoppage of the Pores.—Pigs are not infrequently dull and stupid, hair stands up, and they walk as if stiff in the legs; this is usually caused by a stoppage of the pores on the inside of the leg. Hogs and pigs sweat through these little holes in the leg, and when they become closed from colds or other causes, it makes piggy sick. Treatment: Wash inside of legs with warm water and soap, and rub vigorously.

Boils sometimes appear on head, neck, limbs, or body of pigs. Treatment: Open on under side of the boil or lump with a sharp knife, splitting it open.

EXAMINING THE HERD.

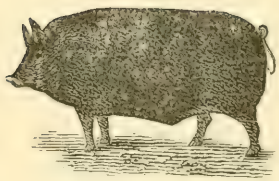
Every day the herd should be carefully examined, for the purpose of knowing that they are all healthy, properly fed, and to see how the several animals are developing. The matings were made to produce certain results, and as the results work out in flesh and blood, they should be daily watched to see how rapidly or how slowly they come. Every day will produce some change in young and growing stock; it may be slight, but the forces of heredity and evolution are constantly at work, and they must be watched and directed by all the artificial help the breeder can command. Often a little extra food and care will brace up the system against a family defect. Evolution must often be aided by good food or change of food. To illustrate: Pigs that are inclined to drop back of the shoulders, commence to show the defect when the mother's milk is not sufficient for the demands of the growing pigs, which is usually when they are from five to ten weeks old. As soon as such trouble is noticed, brace them up by extra feed of sweet milk and ground oats, or milk to drink and soaked wheat to eat. We have often at the first symptoms of a let down, by generous feed of milk and oats, braced them up and kept the backs straight. On the other hand, if the feet are inclined to go down, take off corn and feed oftener and less at a time of milk and oats. If cough or sniffles appear, give a drop or two of turpentine in a little warm milk to each pig, or a like amount of carbolic acid, and grease the nose, throat and breast with a mixture of lard, turpentine and coal oil, in the proportion of ½ lard, ¼ coal oil, and ¼ turpentine. A little prompt work at the start may save much trouble. If a pig lies around, hair stands up, eyes are dull, heavy, or red and watery, the pig is sick; watch it a little while and the symptoms may become sufficiently pronounced to indicate the trouble, which is likely to be one of the many diseases of pigs described in another chapter. The eyes, motion and hair are the untiring sentinels that tell the approach of trouble. As long as the hair lays down smooth and close to the skin and appears glossy and oily, the eye bright, the head up, and the walk quick and vigorous, good health abounds; but when the head is carried low, walk slow, hair stands up, ears droop,

and the pig drops onto its belly when it lies down, something is wrong, and attention is demanded. Unless time is taken every day to look them all over symptoms of disease will not be noticed. See that the troughs, sleeping appartments and feeding places are kept clean; that no more food is given than consumed; that they have plenty of good water to drink; that the larger pigs are not driving away the smaller ones when nursing; in short, that everything is lovely and every pig has a fair chance. Look the pigs over often enough to enable you to tell at a glance where they belong. As they grow up, if you are in doubt as to which litter any pig belongs, wait until it gets to nursing: then walk around, look at its form and features carefully while at the sow, so that you can ever after recognize it beyond a doubt. No two pigs are exactly alike; there may be, and often is, a close resemblance in pigs in same litter or sired by the same boar, but each has an individuality that is distinct, and if once learned, will always thereafter be easily recognized. It is always important to know where a pig belongs, but it is still more important that the breeder should watch and learn how it develops and how nearly it approaches the shape and form he expected. A peculiarity frequently runs in families; some develop quite early, while others do not show up until nearly matured. In order to judge intelligently of the value of a pig, the breeder must know all such traits and peculiarities.

The close built, tight barrelled, nicely trimmed, long bodied, short legged pig looks best when little, and it makes a good seller and shipper, because it gives immediate satisfaction; but it has not the future before it that another of a little looser make, more depth and range of body, higher on the leg, mellow hided, vigorous, high-headed, saucy fellow has.

From the time of birth until maturity the breeder should watch the pigs and examine them critically, noting all defects, excellencies of color, form, peculiarities and characteristics. By so doing, he will soon learn, if he does not already know, that successful breeding is not mere chance work; on the contrary, it is a science, and one in which brains, properly used, push the breeder forward, slowly, it may, but surely, year after year, Such a course will make him cautious about his judgment on young and rapidly growing animals. Often the first choice of the litter at two weeks of age, will be the poorest at six months. With the closest study and application, the best judges are often misled and compelled to change their minds several times in the course of a season. There are so many currents of blood contending for mastery, and often so many hidden forces that time alone can unfold their strength. At one period the characteristics of one ancestor may show up strongly for a while, only to give way and be overshadowed by that of another. Thus day by day, week by week, and month by month, the results of your combinations work out before you in flesh and blood.

As these changes and developments are unfolding before the eye and mind of the breeder, he is delighted or cast down in proportion to the evidences of success or failure observed. It is such painstaking work and observations that makes the breeder realize how much easier the bad points come than the good ones: That a long nose, heavy, thick, large ear, crooked or fished back, weak, soft, yielding feet, small hams, small, narrow shoulders, long, thin neck, small or loose, flabby jowl, coarse hair, flat ribs, pinched flanks and long, crooked legs, is much easier to produce than a short, nice head, fine, thin, silky ears, broad, stright back, large and full hams, shoulders, flank, belly and jowl, fine hair, short, strong, tapering and straight legs, and tough, small feet



FAIRS—JUDGING, COMMITTEE, EXPERTS.

The agricultural fair has been, and still is, an important factor in the development of all the domestic animals. It may be safely said that it has been more potent than any other source, save the agricultural periodicals. The time when fairs were inaugurated may be fixed as the period shortly after improvements in live stock began. In the United States, some few of the Eastern States, Maryland, Pennsylvania, New York and Massachusetts were the first to hold them. We are not now able to give the date or place of the first one in America, but think it was about 1812. At first they were called in many places cattle shows, and for some years the hog was conspicuously absent. From 1821 to 1825 the cattle shows gradually began to assume a general stock character, and soon mechanical, agricultural and horticultural interests were included, and the name, agricultural fair, was given to designate such meetings. The cattle shows of 1820-'21 were the first that offered premiums for hogs. They began mildly, first offering diplomas and some cash premiums, and there was but one class—no distinction as to breeds. It was at first a premium for the best boar, and for the best sow, A few years later a second premium was offered for boars and sows, and all hogs, scrub, grade, mixed and thorough-bred were classed together and competed for the same prize. The animals were exhibited on their looks, not on their blood, a grade often taking first premium and a thorough-bred second, and many times the hog without name was the successful one.

The early committees were often composed of seven persons, and rarely less than five. About 1830 we find some few fairs offering premiums for aged hogs and pigs. Shortly thereafter the hogs were given two classes—the large and small breeds. This was in the period from 1830 to 1840, and it was during that same period that the fight or contest arose between the large and small hog. The question of location had much to do with the opinion of the breeder or raiser. Those persons who were close to large towns and cities, where fresh meat markets were an every day business, favored the small hog, and the farmer who lived some distance and marketed his hogs only in the fall and to packers

favored the large hog, as they could only sell at one season of the year, and in addition to that piggy must walk to his death. This division of sizes at the fairs was the result of this contest. Fair managers usually cater to the feelings of the people in a greater or less degree and at the same time seek to push the people forward. From 1830 to 1860 the committees usually made to the managers of fairs a report, sometimes verbal and other times written, giving a brief account of animals exhibited, premiums awarded, and *honorable mention*. Some of these reports contain considerable information as to the existing breeds and the character of the hogs in that portion of the country, and recommendations, some of which were valuable and others commonplace or worthless. The careful student, however, will note a gradual improvement in the management of fairs and a consequent stimulus in the stock of hogs adjacent thereto.

It may be said that the fair itself was only the demonstration of a feeling of improvement among the people. This may in part be true, but only partially. The fair was, as a rule, the educator in this way, if in no other and it brought farmers and stock growers together, and the animals were before them. This led to discussions and comparison, and discussion and comparison generates ideas and arouses pride, enthusiasm and a desire to excel. When a man is thus loaded he is in the pathway of progress, and has his face in the right direction. The fair has thus started many a man upward, that but for the education and stimulus thus received, would have fooled all his life away feeding scrubs. We do not by any means loose sight of the power of the agricultural paper, which has done, and is doing, more to stir the mind of the farmer to healthy and vigorous action than any other agency, but we simply wish to give the fair due credit. The paper furnishes the text and generates ideas, and the fair furnishes the object lessons, that are more easily grasped than a statement of a fact, by the ordinary and untrained mind.

The separation in classes, of large and small breeds, was some improvement, but it gave the grade the same chance as the pure-bred, and it was not until the year 1850 that different breeds were given classes and premiums for all ages; in addition a class was made for all crosses. Later, in addition to the classes above named, there was added a general premium for boar and sow of any age or breed, called sweepstakes. This was a kind of "free-for-all" and had a beneficial effect. The class by breeds gave a stimulus to the several breeds, and the sweepstakes instituted comparisons and discussions as to the relative merits of breeds.

For several years past the committees selected to award have consisted of three persons. They are usually good, honest men, of fair sense and judgment, but, as a rule, wholly unacquainted with the characteristics of the breeds they are required to pass upon; and, as a natural result

the awards are often misplaced. Even with men who are up in the points, the committee system is uncertain and usually unsatisfactory. The trouble with mankind is, that every individual is possessed of a hobby. One man's hobby is a fine head and ear; another, a big bone; another, a large ham; and, another, a large heart-girth. Now, in examining a hog, the man with a hobby is always looking for the animal that is nearest perfect in the part covered by the hobby. Again some men have an eye for form or symmetry. Something is needed to compel the eye and mind to judge the hog in parts, and then as a whole.

Within a few years a new system has been inaugurated, which we think will produce such a result. We refer to the single judge, or expert system, aided by the standard of excellence adopted by the breeders of the several breeds. Of course, without a standard of points, the expert's efficiency would be greatly lessened; but with the standard before him and directing his attention in detail to every point in the scale, and holding his mind and attention there, each point has consideration; and, having thus been compelled to review each separately, he is better prepared to pass upon the general symmetry. In short, it breaks the force and effect of the hobby, and holds the judge to his work.

The judge should be required to indicate points on the score-card, and then the superintendent should do the footings, so that the expert himself would not know results until announced by the superintendent of the department. Then the rule should be, that all score-cards should be tacked up on the pens, where they can be seen and studied. The fair is, or should be, an educator, and there is no better way to educate the breeder than by the use of a score-card. It is an object lesson, and an application of theories to living facts and forms.

When all fairs adopt the score-card and expert judge system, general intelligence upon the points of animals will greatly increase, and the pathway of success will be plainly marked. Breeders must push forward to that desired end and rest not until such a system is established. It will soon come. Then they can go to a fair that will be *fair*, and will know that the best hog will always win. No professional or non-professional expert, whose score-cards are exposed to the public gaze and criticism, will dare be dishonest or ignorant. He will feel and know that the responsibility rests upon him and can not be shifted off onto the shoulders of the committee—an intangible community that shift responsibility from one to another, and hide behind a majority. The expert has not only to select, but his score-card makes him say why he so selects.

STANDARDS AND STANDARD POINTS.

Intelligent breeders of all classes of domestic animals in all ages have had ideal standards of excellence, or an ideal animal that they sought to bring their herds up to. This has in the past been the means of great good, but it had its defects, and among which were, that there were nearly, or quite as many ideals or standards as there were breeders, so that there could hardly be said to be any combined or uniform efforts in a particular direction. Such have been some of the difficulties in the way of more general progress. Within a few years' however, breeders of different kinds of domestic animals realizing that "in union there is strength," and in unity of purpose there is progress, have combined and associated together, and by a union of minds and discussion of views, formulated a common ideal, given it shape and in a manner substance, by describing it in plain, direct terms, and this description is made plainer by also describing what ought not to be, as well as that which should.

The *Poultry Fancier* was the first to adopt and put in use the system of standards for breeds, and the perfection of their favorites are largely due to a persistent adherence by each breeder to the common judgment of all. Swine breeders are now adopting the same methods, although not so universally. The breeders of all breeds save the Poland-China, have but one standard, and in that respect the breeders of Poland-Chinas are behind their brethren, however there is now a prospect that one standard will in the near future be adopted for the latter breed. This is as it should be, and all efforts looking to such a consummation ought to receive the assistance and encouragement of all persons interested,

Until the common standard is finally adopted, we must present all that exist, and allow the reader to take his choice.

We herewith present, in their regular form, all of the standards as adopted by the Swine Breeders' Association, together with the new standards, as reported by the committee of the National Poland-China Breeders' Assosciation, and the one recently suggested by the *Swine Breeders' Journal*, of Indianapolis, Ind.:

STANDARD OF EXCELLENCE OF BERKSHIRE SWINE.

ADOPTED BY THE AMERICAN BERKSHIRE ASSOCIATION.

COLOR.—Black, with white on feet, face, tip of tail, and an occasional splash on the arm	4
FACE AND SNOUT.—Short, the former fine and well dished, and broad between the eyes	7
EYE.—Very clear, rather large, dark hazel or gray	2
EAR.—Generally almost erect, but sometimes inclined forward with advancing age, medium size, thin and soft	4
JOWL.—Full and heavy, running well back on neck	4
NECK,—Short, and broad on top	4
HAIR.—Fine and soft, medium thickness	3
SKIN.—Smooth and pliable	4
SHOULDER.—Thick and even, broad on top, and deep through chest	7
BACK.—Broad, short and straight, ribs well sprung, coupling close up to hip	8
SIDE.—Deep and well let down, straight on bottom line	6
FLANK.—Well back, and low down on leg, making nearly a straight line with lower part of side	5
LOIN.—Full and wide	9
HAM.—Deep and thick, extending well up on back, and holding thickness well down to hock	10
TAIL.—Well set up on back, tapering and not coarse	2
LEGS.—Short, straight and strong, set wide apart, with hoofs erect, and capable of holding good weight	5
SYMMETRY.—Well proportioned throughout, depending largely on condition	5
CONDITION.—In a good healthy growing state not over-fed	6
STYLE.—Attractive, spirited, indicative of thorough-breeding and constitutional vigor	5
	100

SCALE OF POINTS FOR CHESTER WHITES.

AS ADOPTED BY THE CHESTER WHITE RECORD ASSOCIATION AT THEIR ANNUAL MEETING, JANUARY, 1885.

HEAD.—Small, broad slightly dished	7
EAR.—Thin, fine, drooping	2
JOWL.—Neat and full	4
NECK.—Short, full, well arched	3
BRISKET.—Full and deep	3
SHOULDER.—Broad and deep	6
GIRTH AROUND HEART.—	9
BACK.— traight and broad	6
SIDES.—Deep and full	7
RIBS.—Well sprung	6
LOIN.—Broad and strong	7
BELLY.—Wide and straight	5
FLANK.—Well let down	3
HAM.—Broad, full and deep	10
LIMBS.—Strong, straight, and neat	6
TAIL.—Tapering, and not coarse	2
COAT.—Fine and thick	3
COLOR.—White	3
SYMMETRY	8
Total	100

DETAILED DESCRIPTION.

HEAD—Short; broad between the eyes, and nicely tapering from eyes to point of nose; face slightly dished; cheeks full.

OBJECTIONS—Head coarse, long and narrow; face straight, or too much dished; snout coarse or thick.

EAR—Drooping; thin; pointing outward and forward; well proportioned to size of body.

OBJECTIONS—Too large and coarse; thick, lopping; lying too near the face; stiff, erect, or too small.

JOWL—Full, firm, and neat; carrying fullness well back to neck and brisket.

OBJECTIONS—Flabby; light; thin in cheek; tucking up under the neck.

NECK—Full, deep, short, and well arched.

OBJECTIONS—Long; flat; lacking in fullness or depth.

BRISKET—Full; strong; well let down; extending well forward, and on line of belly.
OBJECTIONS—Narrow or tucked up.
SHOULDER—Broad; deep; thickness in proportion to the side and ham; full and even on top.
OBJECTIONS—Thick beyond the line of side and ham; lacking in depth or width; blade prominent, or extending above the line of the back.
GIRTH AROUND THE HEART—Full back of shoulders; ribs extending well down, wide, and full back of foreleg.
OBJECTIONS—Less than flank or length of body from top of the head to root of tail.
BACE—Broad, straight, or slightly arched, carrying width well back to the hams, and of medium length.
OBJECTIONS—Narrow; sinking back of shoulders; narrow across the loin; swayed; too long; sun-fish shaped.
SIDES—Full, deep, carrying weight and thickness well down and back.
OBJECTIONS—Too round or flat; shallow or thin at the flank.
RIBS—Well sprung, carrying fullness well back and deep.
OBJECTIONS—Too flat; curve of rib too short; tucking in at bottom; sagging about loin.
LOIN—Broad, strong, and full.
OBJECTIONS—Narrow; poorly ribbed up; weak.
BELLY—Wide and straight; width approximating that of the back.
OBJECTIONS—Sagging; narrow; skin coarse, harsh, or thick.
FLANK—Well let down and full
OBJECTIONS—Thin; tucked in; cut up too high
HAM—Broad, full, deep; of medium length; coming down well on the hock.
OBJECTIONS—Narrow; short; running too far up the back; steep at the rump.
LIMBS—Medium length; short rather than long; set well apart, and well under; muscles full above knee and hock; bone firm, and not coarse; pasterns short and strong; foot short.
OBJECTIONS—Long, slim, coarse, crooked; muscle light; pastern long, slim, or flat; hoofs long or sprawling.
TAIL—Small, tapering, smooth; well set on.
OBJECTIONS—Coarse; large; too prominent at the root.
COAT—Fine and thick.
OBJECTIONS—Coarse; hair too long; wiry; harsh.
COLOR—White; (blue spots in skin and black specks shall not argue impurity of blood).
SYMMETRY—Uniform build, and all points in animal in proportion.
OBJECTIONS—Wanting in some points, and too much developed in others.

STANDARD OF CHARACTERISTICS

ADOPTED BY THE AMERICAN DUROC-JERSEY SWINE BREEDERS' ASSOCIATION.

A Duroc-Jersey should be moderately long, quite deep bodied, not round, but broad on the back, holding the width well out to the hips and hams. The head should be small in proportion to the body. The face slightly dished, nose rather short. Ears medium in size, pendant, and falling towards the eyes, and must not be erect. The neck should be short, deep and thick. The legs short, wide apart, and well set under the body. Bone of medium fineness, arm large, and flank well down. The hams should be broad and full, well down to the hock. Tail large at its base, and tapering to its extremity. There should be a good coat of hair of medium fineness; usually straight, but in some cases wavy, with few, if any, bristles at the top of the neck and shoulders. The color should be red, varying dark, glossy cherry, to light or yellowish red. An occasional fleck of black (usually on the belly and legs) is admissible, but cherry red without black is preferred. In disposition, mild and gentle. Pigs at nine months of age should dress 250 pounds to 300 pounds, and when fully matured, 400 to 700 pounds.

SCALE OF POINTS FOR JUDGING DUROC-JERSEY SWINE.

1.	Color: Cherry red, without other admixture	5
2.	Head: Nose; fine and short. Face; slightly dished, wide between eyes	10
3.	Ears: Medium size, not erect nor too drooping	5
4.	Cheeks: Large, full and well rounded	5
5.	Neck: Short, evenly deep from poll to shoulders	5
6.	Shoulders; Broad, smooth, nearly level on top	5
7.	Chest: Deep, filled level behind shoulders	10
8.	Back: Broad, straight or slightly arching, carrying even width to hips	10
9.	Sides: Deep, medium length, level between shoulders and hips	10
10.	Belly: Straight underline, not paunchy	5
11.	Hams: Large, full, well-rounded, extending well to hock joint	10
12.	Legs: Medium bone, short, straight, well up on toes	5
13.	Tail: Set medium high, nicely tapering from base	5
14.	Hair: Fine, soft, straight, moderately thick	5
15.	Action: Vigorous animated, sprightly	5
		100

SCALE OF POINTS FOR SMALL-YORKSHIRE PIGS.

A GUIDE, BOTH IN JUDGING AND BREEDING.

HEAD	Smaller the better	2	15
	Nose—Shorter the better	5	
	Dish—Greater the better	3	
	Width between ears—Greater the better	3	
	Ears small, thin, erect--More so the better (May be pricked forward, not lopped.)	2	
TRUNK	Top line—Straighter the better, from shoulder to tail	5	35
	Belly line—The more level the better	5	
	Girth in excess of length—More the better, if not more than ten per cent.	5	
	Depth--Greater the better	5	
	Width--Greater and evener the better, from shoulder to ham	5	
	Loin—Broader the better	3	
	Flank—Deeper and fuller the better	2	
HAMS	Length—Longer the better	10	25
	Breadth--Broader the better	10	
	Thickness—Greater the better	5	
SHOULDERS	Length—Longer the better	2	5
	Breadth—Broader the better	3	
	Thickness	0	
LEGS	Shorter the better	3	5
	Straighter the better	2	
SKIN	Smooth, flexible, finer—More so the better (Must not be too thin ridgy and coarse, nor show discolored spots from old sores, not pale and ashy, but healthy in color and free from eruption.)	5	5
HAIR	Evener, finer, and thicker the better	5	5
GENERAL APPEARANCE.	Symmetry and evidence of vigorous health	5	5
	Total		100

DISCOUNTS AND DISQUALIFICATIONS.

1. PEDIGREE—Lack of registration or eligibility to be registered disqualifies 100 points.
2. STERILITY—Inability to produce offspring disqualifies 100 "
3. DEFORMITY—Any structural deformity or *lack* disqualifies 100 "
4. DISEASE—Any evidence of, or tendency to disease, disqualifies 100 "
   " Scars of sores, discolored spots, eruptions, excema, etc 5 to 25 "
5. COLORED HAIR—Disqualifies 100 "
6. COLORED SPOTS—Dark spots in skin 5 to 25 "
7. SIZE—Inordinate size, with coarseness of bone or form 10 to 50 "
8. " Diminutive size 5 to 25 "
9. DISPOSITION—Savage or fierce nature 5 to 10 "

SCALE OF POINTS OF THE AMERICAN POLAND-CHINA ASSOCIATION.

ADOPTED IN 1884.

1.	COLOR—Dark predominating	3
2.	HEAD—Short, small, and wide between the eyes	8
3.	EARS—Fine, silky and drooping	3
4.	NECK—Short and slightly arched	3
5.	JOWL—Large and neat	3
6.	SHOULDER—Broad and deep	8
7.	HEART GIRTH—Large and full	10
8.	RIBS—Well sprung	8
9.	BACK—Straight or slightly arched	8
10.	SIDES—Deep	9
11.	LOIN—Wide and full	10
12.	FLANK—Well let down	3
13.	BELLY—Wide and straight	3
14.	HAM—Broad, deep, and well let down on hock	12
15.	LEGS—Short; pastern short and standing well on toes	5
16.	TAIL—Tapering and not coarse	2
17.	HAIR—Fine and thick	2
	Total	100

OBJECTIONS.—Color, to much white or sandy; head coarse, long, and narrow;

snout thick; ears too large and coarse, lying too near the face, or stiff and erect; neck long and thin; jowl flabby, light and thin; shoulder-blade prominent and sticking up; heart, less girth than around the flank; ribs flat, too short, and tucking in at the bottom; back narrow and sinking back of shoulders; sides too round or flat; shallow or thin at flank; loins narrow and poorly ribbed up and weak; flank thin, cut up too high; belly sagging, narrow and flabby; ham narrow, short, and steep at rump; legs short, slim and crooked; tail thick and coarse; hair coarse, thin; bristles harsh, wiry.

SCALE OF POINTS OF THE OHIO POLAND-CHINA RECORD COMPANY,

AS ADOPTED AT THEIR ANNUAL MEETING, JANUARY 1883, AND REVISED BY A COMMITTEE, APRIL, 1885.

1.	HEAD—Small, broad	6
2.	EYES—Large and bright	2
3.	EARS—Thin, fine, bending gracefully	3
4.	JOWL—Neat and full	2
5.	NECK—Short, full, well arched	3
6.	BRISKET—Full and deep	3
7.	SHOULDER—Broad and deep	5
8.	GIRTH AROUND HEART—	9
9.	BACK—Straight and broad	6
10.	SIDES—Deep and full	7
11.	RIBS—Well sprung	6
12.	LOIN—Broad and strong	7
13.	BELLY—Wide and straight	5
14.	FLANK—Well let down	8
15.	HAM—Broad, full and deep	9
16.	LIMBS—Strong, straight and deep	8
17.	TAIL—Tapering, and not coarse	2
18.	COAT—Fine and soft	2
19.	COLOR—Dark spotted or black	3
20.	SYMMETRY—	8
	Total	100

DETAILED DESCRIPTION.

1 HEAD—Short; broad between the eyes, and nicely tapering from eyes to point of nose; face slightly dished; cheeks full.
OBJECTIONS—Head coarse, long and narrow; face straight or too much dished; snout coarse or thick.

2 EYES—Large, bright, and free from overhanging fat.
OBJECTIONS—Small, dim, or hidden under protruding fat.

3 EAR—Bending gracefully; thin; pointing outward and forward; well proportioned to size of body.
OBJECTIONS—Too large and coarse; thick, lopping; lying too near the face; stiff, erect, or too small.

4 JOWL—Full, firm and neat; carrying fullness well back to neck and brisket.
OBJECTIONS—Flabby; light; thin in cheek; tucking up under the neck.

5 NECK—Full, deep, short, and well arched.
OBJECTIONS—Long, flat, lacking in fullness or depth.

6 BRISKET—Full; strong; well let down; extending well forward, and on line of the belly.
OBJECTIONS—Narrow, or tucked up.

7 SHOULDER—Broad; deep; thickness in proportion to the side and ham; full and even on top.
OBJECTIONS—Thick beyond the line of side and ham; lacking in depth or width; blade prominent, or extending above the line of the back.

8 GIRTH AROUND THE HEART—Full back of shoulders; ribs extending well down wide and full back of foreleg
OBJECTIONS—Less than flank measure or length of body from top of the head to the root of the tail.

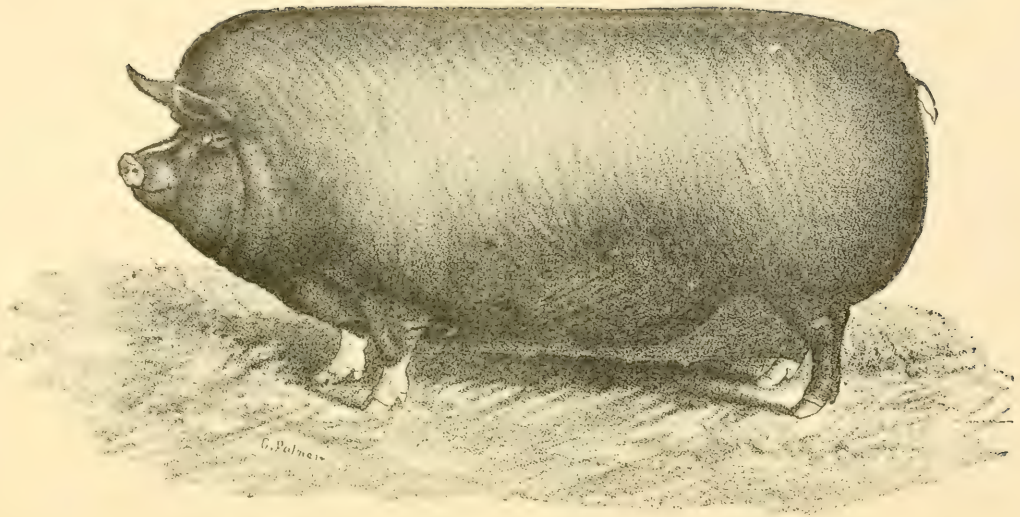
9 BACK—Broad, straight, or slightly arched, carrying width well back to hams, and of medium length.
OBJECTIONS—Narrow; sinking back of the shoulders; narrow across the loin; swayed, too long; sunfish shaped.

10 SIDES—Full, deep, carrying weight and thickness well down and back.
OBJECTIONS—Too round or flat; shallow or thin at the flank.

11 RIBS—Well sprung, carrying fullness well back and deep.
OBJECTIONS—Too flat; curve of rib too short; tucking in at bottom; sagging about loin

12 LOIN—Broad, strong and full.
OBJECTIONS—Narrow; poorly ribbed up; weak.

13 BELLY—Wide and straight; width approximating that of the back,
OBJECTIONS—Sagging; narrow; skin coarse, harsh and thick.


C. Palmer

14 FLANK—Well let down, and full
OBJECTIONS—Thin; tucked in; cut up too high.
15 HAM—Broad, full, deep; of medium length; coming down well over the hock.
OBJECTIONS—Narrow; short; running too far up the back; steep at the rump.
16. LIMBS—Medium length; short rather than long; set well apart, and well under; muscles full above knee and hock; bone firm and not coarse; pasterns short and strong; foot short.
OBJECTIONS—Long, slim, coarse, crooked; muscles light; pastern long, slim or flat; hoofs long or sprawling.
17 TAIL—Small, tapering, smooth; well set on.
OBJECTIONS—Coarse; large; too prominent at the root.
18 COAT—Fine and soft; covering the body well.
OBJECTIONS—Coarse, bristly; hair too long; wiry, harsh.
19 COLOR—Black, with white points or dark spotted; spots clear white (sandy spots and speckled color shall not argue impurity of blood, but are not desirble.)
OBJECTIONS—Solid black, or with more sandy or white than black.
20 SYMMETRY—An even development, bringing form and dimension of the several parts of body in proportion to each other.
OBJECTIONS—Too much developed in some points and lacking in others.

SCALE OF POINTS OF THE CENTRAL SWINE RECORD ASSOCIATION.

ADOPTED JANUARY, 1885.

1.	HEAD—Small, broad, slightly dished	5
2.	EAR—Thin, fine, drooping	3
3.	NECK—Short, full, well arched	3
4	JOWL—Neat and full	2
5.	BRISKET—Full	3
6.	SHOULDER—Broad and deep	6
7	GIRTH AROUND HEART	10
8.	BACK—Straight and strong	6
9.	SIDES—Deep and full	6
10.	RIBS—Well sprung	9
11.	LOIN—Broad and strong	7
12.	BELLY—Wide and straight	4
13.	FLANK—Well let down	3
14.	HAM—Broad, full and deep	10
15.	COAT—Fine and thick	4
16.	LIMBS—Strong, straight and tapering	5
17.	TAIL—Tapering and not coarse	1
18.	COLOR—Dark	3
19.	ACTION—Vigorous, easy, lively	5
20.	SYMMETRY	5
	Total	100

DETAILED DESCRIPTION.

1 HEAD—Short; broad between the eyes and nicely tapering from the eyes to point of nose; face slightly dished; cheeks full.
OBJECTIONS—Head coarse, long and narrow; face too much dished; snout coarse or thick.
2 EAR—Drooping; thin; pointing forward
OBJECTIONS—Too large and coarse; thick, lopping; lying too near the face; stiff, erect, or too round.
3 NECK—Full, deep, short, and well arched
OBJECTIONS—Long; flat; lacking in fullness or depth.
4 JOWL—Full, firm, and neat; carrying fullness to shoulder and brisket.
OBJECTIONS—Flabby; light; thin in cheek.
5 BRISKET—Full; well let down; extending well forward and on line of belly.
OBJECTIONS—Narrow
6 SHOULDER—Broad; deep; full and even on top.
OBJECTIONS—Lacking in depth or width; blade too prominent.
7 GIRTH AROUND HEART—Full back of shoulders; ribs extending well down; wide and full back of foreleg.
OBJECTIONS—Less than flank or length of body from top of head to root of tail, or creased back of shoulder.
8 BACK—Broad, straight, or slightly arched, carrying the width back to ham, and of medium length.
OBJECTIONS—Narrow; creasing back of shoulders; narrow across the loin; swayed; too long; fish shaped.
9 SIDES—Full, deep, carrying the size well down and back
OBJECTIONS—Too round or flat; or thin at the flank; flabby.

10 RIBS—Well sprung and long.
OBJECTIONS—Too flat; curve of ribs too short.
11 LOIN—Broad, strong and full.
OBJECTIONS—Narrow, weak.
12 BELLY—Wide and straight.
OBJECTIONS—Sagging, narrow.
13 FLANK—Well let down and full.
OBJECTIONS—Thin; tucked in; cut up too high.
14 HAM—Broad, and coming down well to the hock.
OBJECTIONS—Narrow, short, too steep at the rump.
15 COAT—Fine, thick, straight.
16 LIMBS—Medium length, stout, tapering, set well apart, bone firm and not coarse, pasterns short, short toes.
OBJECTIONS—Long, slim, coarse, crooked, muscle light. pastern slim or flat, toes long or spreading.
17—TAIL—Small, tapering.
OBJECTIONS—Coarse, large, too prominent at the root.
18 COLOR—Dark, with a few clear white spots. (sandy spots and speckled color shall not argue impurity of blood, but are not desirable).
OBJECTIONS—Solid black, or with more sandy or more white than black hair over the body, or plum color.
19 ACTION—Easy, fine and graceful.
OBJECTIONS—Slow, clumsy.
20 SYMMETRY—Harmonious combination of all the foregoing schedule of points.

THE COMMITTEE STANDARD.

1.	COLOR—Dark spotted or black	1
2.	HEAD—Small, broad, slightly dished	5
3.	EARS—Fine and drooping	2
4.	JOWL—Neat and full	2
5.	NECK—Short, full, slightly arched	3
6.	BRISKET—Full	3
7.	SHOULDER—Broad and deep	6
8.	GIRTH AROUND HEART	10
9.	BACK—Straight and broad	7
10.	SIDES—Deep and full	6
11.	RIBS—Well sprung	7
12.	LOIN—Broad and strong	7
13.	BELLY—Wide and straight	4
14.	FLANK—Well let down	3
15.	HAM—Broad, full and deep	10
16.	TAIL—Tapering, not coarse	2
17.	LIMBS—Strong, straight and tapering	7
18.	COAT—Thick and soft	3
19.	ACTION—Prompt, easy, and graceful.	5
20.	SYMMETRY—Adaptation of the several points to each other	5
	Total	100

DETAILED DESCRIPTION

1 COLOR—Black, or dark spotted with white points; (sandy spots and speckled color shall not argue impurity of blood but are not desirable.)
OBJECTIONS—Solid black, or with more sandy or white than black hairs over the body.
2 HEAD—Short; broad between the eyes and nicely tapering from the eyes to point of nose; face slightly dished; cheeks full.
OBJECTIONS—Head coarse, long and narrow; face too much dished; snout coarse and thick.
3 EARS—Drooping, fine and silky; pointing forward and a little outward; well proportioned to size of body.
OBJECTIONS—Too large and coarse; thick, lopping; lying too near the face; stiff, erect, or too round.
4 JOWL—Full, firm, and neat; carrying fullness well back to shoulder and brisket.
OBJECTIONS—Flabby; light; thin in cheek, tucking up under the neck.
5 NECK—Full, deep, short, and slightly arched.
OBJECTIONS—Long; flat; lacking in fullness or depth.
6 BRISKET—Full; well let down; extending well forward and on line of belly.
OBJECTIONS—Narrow or tucked up.
7 SHOULDER—Broad; deep; thickness in proportion to the side and ham; full and even on top.
OBJECTIONS—Lacking in depth or width; thick beyond the line of side and ham; blade too prominent.
8 GIRTH AROUND THE HEART—Full back of shoulders; ribs extending well down wide and full back of foreleg

OBJECTIONS—Less than flank measure or length of body from top of the head to the root of the tail, or creased back of shoulders

9 BACK—Broad, straight, or slightly arched, carrying width well back to hams, and of medium length.
OBJECTIONS—Narrow; creasing back of the shoulders; narrow across the loin; swayed, too long; sunfish shaped.

10 LOIN—Broad, strong and full.
OBJECTIONS—Narrow and weak.

11 SIDES—Full, deep, carrying the size well down and back.
OBJECTIONS—Too round or flat; shallow or thin at the flank.

12 RIBS—Well sprung and long; carrying fullness and depth well back.
OBJECTIONS—Too flat; curve of rib too short.

13 BELLY—Wide and straight.
OBJECTIONS—Sagging; narrow.

14 FLANK—Well let down, and full.
OBJECTIONS—Thin; tucked in; cut up too high.

15 HAM—Full, broad, deep; holding width and coming well down over hock.
OBJECTIONS—Narrow, short; too deep at the rump, and cut up too high in the crotch.

16 TAIL—Well set on; small, smooth and well tapered.
OBJECTIONS—Coarse, large, too prominent at the root.

17 LIMBS—Medium length; well set apart and well tapered; bone firm and flinty; not coarse; muscles full above knee and hock, pastern short, foot short.
OBJECTIONS—Long, slim, coarse, crooked; muscles light; pastern long, slim, or flat; feet long or sprawling.

18 COAT—Fine, thick and covering the body well.
OBJECTIONS—Coarse, bristly, harsh and wiry.

19 ACTION—Easy, prompt, fine and graceful.
OBJECTIONS—Dull, sluggish, clumsy.

20 SYMMETRY—An harmonious combination of the foregoing scale of points.
OBJECTIONS—Too much developed in some points and lacking in others.

SCALE OF POINTS OF THE NORTHWESTERN POLAND-CHINA RECORD ASSOCIATION.

AS ADOPTED AT THEIR ANNUAL MEETING, OCTOBER, 1883,

1.	HEAD—Small, broad, dished	10
2	EARS—Thin, fine, drooping	3
3.	NECK—Short, full, well arched	4
4.	JOWL—Neat and full	2
5.	BRISKET—Full and deep	3
6.	SHOULDER—Broad and deep	7
7.	GIRTH ABOUT HEART	9
8.	BACK—Straight and broad	5
9.	SIDES—Deep and full	9
10.	RIBS—Well sprung	9
11.	LOIN—Broad and strong	7
12.	BELLY—Wide and straight	5
13.	FLANK—Well let down	3
14.	HAM—Broad, full and deep	10
15.	COAT—Fine and thick	4
16.	LIMBS—Strong, straight and neat	5
17.	TAIL—Tapering, and not coarse	2
18.	COLOR—Dark spotted	3
	Total	100

DETAILED DESCRIPTION.

1 HEAD—Short; broad between the eyes, and nicely tapering from eyes to point of nose; face slightly dished; cheeks full.
OBJECTIONS—Head coarse, long and narrow; face straight or too much dished; snout coarse or thick.

2 EAR—Drooping, thin; pointing outward and forward; well proportioned to size of body.
OBJECTIONS—Too large and coarse; thick, lopping; lying too near the face; stiff, erect, or too small.

3 JOWL—Full, firm and neat; carrying fullness well back to neck and brisket.
OBJECTIONS—Flabby; light; thin in cheek; tucking up under the neck.

4 NECK—Full, deep, short, and well arched.
OBJECTIONS—Long, flat, lacking in fullness or depth.

5 BRISKET—Full; strong; well let down; extending well forward, and on line of the belly.
OBJECTIONS—Narrow, or tucked up.

6 SHOULDER—Broad; deep; thickness in proportion to the side and ham, full and even on top.

OBJECTIONS—Thick beyond the line of side and ham, lacking in depth or width blade too prominent, or extending above the line of the back.

7 BACK—Broad, straight, or slightly arched, carrying the width well back to ham, and of medium length.
OBJECTIONS—Narrow; sinking back of shoulders; narrow across the loins; swayed; too long; sunfish shaped.

8 GIRTH ABOUT THE HEART—Full back of shoulders; ribs extending well down; wide and full back of foreleg.
OBJECTIONS—Less than flank or length of body from top of head to root of tail,

9 SIDES—Full, deep, carrying weight and thickness well down and back.
OBJECTIONS—Too round or flat; shallow or thin at the flank.

10 RIBS—Well sprung, carrying fullness well back and deep.
OBJECTIONS—Too flat; curve of rib too short; tucking in at bottom; sagging about loin.

11 LOIN—Broad, strong and full.
OBJECTIONS—Narrow; poorly ribbed up; weak.

12 BELLY—Wide and straight; width approximating that of the back,
OBJECTIONS—Sagging; narrow; skin coarse, harsh and thick.

13 FLANK—Well let down and full.
OBJECTIONS—Thin; tucked in; cut up too high.

14 HAM—Broad, full, deep, of medium length; coming down well over the hock.
OBJECTIONS—Narrow; short; running too far up the back; steep at the rump.

15 LIMBS—Medium length; short rather than long; set well apart, and well under; muscles full above knee and hock; bone fine and not coarse; pasterns short and strong; foot short.
OBJECTIONS—Long, slim, coarse, crooked; muscles light; pastern long, slim or flat; hoofs long or sprawling.

16 COAT—Fine and thick.
OBJECTIONS—Coarse, bristly; hair too long; wiry, harsh.

17 TAIL—Small, tapering, smooth; well set on.
OBJECTIONS—Coarse; large; too prominent at the root.

18 COLOR—Dark spotted, or black with clear white spots (sandy spots and speckled color shall not argue impurity of blood, but are not desirable).
OBJECTIONS—Solid black, or with more sandy or more white than black hair over body.

THE SWINE BREEDERS' JOURNAL STANDARD.

1.	HEAD AND FACE—Short, broad, slightly dished and neat (in male masculine)	4
2.	EYES—Lively, bright, free from fat or wrinkled surroundings	2
3.	EAR—Small, fine, thin, pointing forward and drooping	3
4.	NECK—Short, full and light crest	2
5.	JOWL—Large, full and firm	2
6.	BRISKET—Full and prominent	2
7.	SHOULDER—Full, broad, deep and strong	6
8.	CHEST—Large, roomy, round and large girth	10
9.	RIBS—Long and well rounded	5
10.	SIDES—Deep and full	5
11.	BACK—Broad, slightly arched, medium length	7
12.	LOIN—Broad and full	5
13.	HAM—Broad, full and long	10
14.	BELLY—Wide, straight, and flank low and full	3
15.	COAT—Fine, straight, of medium thickness	3
16.	LEGS—Strong, straight and tapering	10
17.	TAIL—Tapering and fine	1
18.	COLOR—Black, with few white spots	3
19.	ACTION—Vigorous, easy and quick	5
20.	CONDITION—Healthy; mellow to the touch	5
21.	SYMMETRY	5
22.	DISPOSITION—Quiet and gentle	2
	Total	100

DISQUALIFICATIONS:

FORM—Upright ears; small, cramped chest; crease back of shoulders so as to be readily seen; deformed and badly crooked legs; feet broken down so that the animal walks on pastern joints and dew claws.
CONDITION—Excessive fatness; barren, deformed or diseased.
COLOR—More than one-half white or sandy.
SCORE—A score of less than fifty of the standard.
PEDIGREE—Lack of eligibility to record.

DETAILED DESCRIPTION.

1 HEAD—Short, broad between eyes and nicely tapering from eyes to end of nose; face slightly dished; cheeks full and jaws broad (in the male masculine.)

OBJECTIONS—Head long, coarse or narrow; face straight or too much dished; narrow and contracted jaws.

2 EYES—Bright, lively, clear and free from wrinkled or fat surroundings.
OBJECTIONS—Small; dull; deep set; and surrounded by wrinkles or fat, so as to impair the vision.

3 EAR—Small; thin; soft; firmly attached to the head; pointing forward, and the forward half drooping gracefully.
OBJECTIONS—Large; coarse; thick; round; long knuck or attachment; lying too close to face or standing up and outward.

4 NECK—Wide; deep; short and nicely arched.
OBJECTIONS—Narrow; long; flat and thin.

5 JOWL—Full; large; firm; carrying fullness well back to shoulder and brisket.
OBJECTIONS—Light; flabby; thin; sagging and out of proportion to size of body.

6 BRISKET—Broad, prominent.
OBJECTIONS—Narrow and pinched.

7 SHOULDERS—Broad, deep, full; not extending above line of back.
OBJECTIONS—Narrow; cramped; flat; extending above line of back and sloping too much from point to top.

8 CHEST—Large; cylindrical and roomy, indicating large cavity for the vital organs, and giving large girth back of shoulders.
OBJECTIONS—Flat; pinched; narrow either at top or bottom; girth less than flank

9 RIBS—Long, strong, well sprung at back; rounded, compelling fullness of body well back to loin.
OBJECTIONS—Flat; short; weak and giving the body a slabsided appearance.

10 SIDES—Full, firm and deep, carrying size well down and back.
OBJECTIONS—Flat; thin; flabby; pinched.

11 BACK—Broad, slightly arched; carrying same width from shoulder to ham and of medium length.
OBJECTIONS—Narrow; depressed at shoulders; swayed in middle; humped; too long or sunfish shaped.

12 LOIN—Broad; full and on even line with back.
OBJECTIONS—Narrow; pinched; humped up or depressed.

13 HAM—Broad; full; long and running well down to and over hock.
OBJECTIONS—Narrow; flat; short; lacking fullness on either side of root of tail and too flat on rump.

14 BELLY—Wide, straight and full.
OBJECTIONS—Narrow; sagging; flabby and tucked up at flank.

15 FLANK—Full and low, making nearly a straight line with the lower part of the body.
OBJECTIONS—Thin; tucked up or pinched.

16 COAT—Fine; straight; smooth, laying close to the body.
OBJECTIONS—Bristles; coarse; wavy or curly; standing up off of body; ends of hair split and brown; wavy being less objectionable than curly.

17 LEGS AND FEET—Legs medium length; straight; set well apart and squarely under the body; tapering; well muscled above knee and hock; bone firm and of fine texture; pasterns short, firm and upright; feet short, firm, tough and free from defects.
OBJECTIONS—Legs long, slim, coarse, crooked; muscles light; bone coarse and broad; pasterns long and slim; long, flat or weak hoofs; toes spreading or crooked and unable to bear up the weight of animal without breaking the pasterns down.

18 TAIL—Well set on; small; tapering and carried in a curl.
OBJECTIONS—Coarse; long; crooked and hanging straight down like a cow.

19 COLOR—Black, with very few small clear white spots well defined.
OBJECTIONS—Solid black; more than one-fourth white; sandy spots or a grizzled or speckled appearance.

20 ACTION—Vigorous, easy, active and graceful.
OBJECTIONS—Slow, clumsy; awkward; difficulty in getting up when down; low carraige of head.

21 CONDITION—Healthy and mellow to the touch; fat evenly laid on.
OBJECTIONS—Harsh to touch; flabbiness; fat in lumps on back and sides; too much fat for breeding.

22 SYMMETRY—An even and harmonious development of all the foregoing points.

23 DISPOSITION—Quiet and gentle.
OBJECTIONS—Cross, restless and quarrelsome.

We think the latter one the best of all the standards yet suggested for Poland-Chinas.

Since the foregoing was put in type, the National Poland-China Association held its annual meeting at Chicago, Illinois, and adopted

the standard recommended by the committee, with the following additions:

SERIOUS OBJECTIONS:

FORM—Small growth; upright ears; small, cramped chest; crease back of the shoulders, so as to readily be seen; deformed and badly crooked legs; feet broken down so that the animal walks on pastern joint and dew claws.

DISQUALIFICATIONS:

CONDITION—Excessive fatness; barren; deformed; unsound or diseased; ridgling or one seeded.
SCORE—A score of less than sixty of the standard
PEDIGREE Lack of eligibility to record.

The standard, which the committee compiled, with the "serious objections" and "disqualifications," is now the standard.

Just what force is to be given to the "serious objections" is a conundrum we can not answer, and with due deference to the action of the National Association, we think it shows a lack of nerve. What is the difference, for example, in deformed and badly crooked legs in the "serious objections" and the word deformed in the "disqualifications." Again, it is hardly possible for a hog having many of the serious objections to score sixty points. Other criticisms might well be urged to this half-hearted policy, but it would occupy too much space here to enter at length into a discussion of them. We have given our readers all the standards used and the best one we think suggested for two reasons: first, the reader can see what has been done, and in that way acquire a better idea of the relative value of standards, and by studying all, be better prepared to join his efforts with others in perfecting a new standard that shall eclipse all—which we think will be the result of the near future.

Until a better is adopted, let us work by the one now in force as best we may.

It will be better for all Poland-China Record Associations to accept the standard adopted by the National Association, until changed by the same authority to the end that there be uniformity and concert of action among the breeders of this best of breeds.

It was, in our judgment, necessary to have a beginning of disqualifications and small favors in that line should be thankfully received. When the list becomes longer and more definite, the progress of breeders will be more definite and certain.

Let us all bow to the powers that be, and if not satisfied, work for future changes as time, experience and necessity indicate.

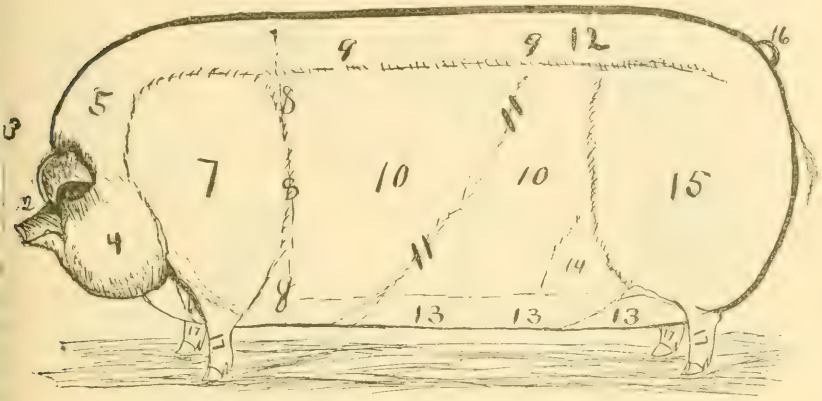
It is a long stride to get a uniform standard even though it may, to some, seem imperfect.

Get in line and push forward.

No standard is, or can be complete that has not a list of disqualifications.

It will be noticed that each and all of the standard-makers take one hundred points, and divide that number into as many divisions as may suit their fancy. All, however, are in accord upon the sum total of points, but their distribution upon different parts are as varied as there are standards.

Standards to be useful and instructive, must be studied and understood. One way of studying them is by way of illustrations, and we have adopted the latter mode, upon many points, for this chapter. The illustrations are for Poland-Chinas, but most of them are applicable for all breeds. The first illustration is one showing the parts of the body, covered by the various division of points:



The numbers used on the above cut are those of the Central Standard, but so far as illustrating the size and location of the sub-divisions of points, this need make no difference, as it illustrates the points, or rather presents to the eye a map of the outlines of points that are intended to locate the various divisions of the standard.

The head is the first point we have illustrated. It is No. 2 in the American and Committee Standards, and No. 1 in the Ohio, Central, and Northwestern Standards. We have here an illustration of the head, jowl, and ear, on one plate. We have numbered the separate illustrations of the following plate from 1 to 18, and refer to them by numbers. For comparing the figures with the remarks in connection therewith, it would have been more convenient for the reader to have had the several cuts separated, but for comparison one with another, it is better that they should be grouped together; upon the whole, we have thought the latter plan the better:

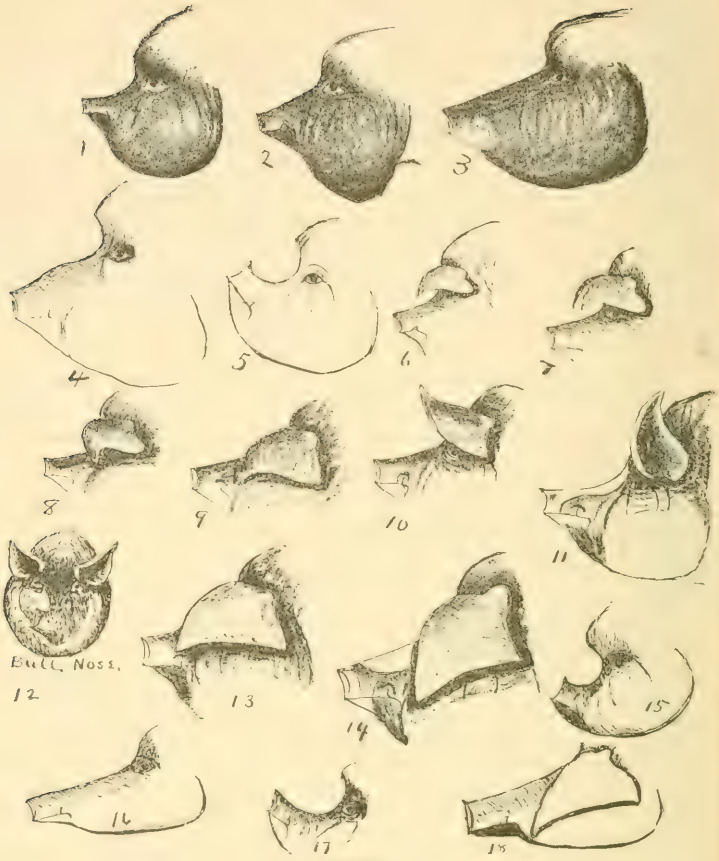


PLATE No. 1.

HEAD.

No. 1 shows the standard head and face—wide between the eyes; short, tapering from the eyes to the point of the nose, and terminating in a fine, clean muzzle, and fine cheeks. *Objections:* No. 2 is long, straight, narrow between the eyes, bony cheeks; No. 3 is long, coarse, heavy, and narrow between the eyes; No. 4 is not long in proportion, but is thick, coarse and heavy; No. 5 shows the objection of too much dish, and muzzle too large; No. 17 has too much dish; No. 16 is the scrub head; No. 12 shows the head and nose disfigured by a disease called bull-nose or nasal catarrh. No. 1 being the standard, all others are more or less off, so far as the head and face are concerned. Nos. 6,

7, 8 and 11 are nearly standard. No. 15 is too much dished, and too coarse. The heads which show ears were drawn more to illustrate the different ears than peculiarities of head, yet by closely studying them, the reader will observe that no two are alike, each one having a peculiarity of its own and all varying from the standard face.

EYE.

The standard eye is shown in Nos. 1 and 2; others too small in proportion to size of head.

EAR.

The ear is No. 3, or third in the Committee's, Ohio, and American Standards, and No. 2 in the Central and Northwestern Standards. In the illustration the standard ear is shown in Nos. 7 and 8, with the preference for No. 8. No. 6, however, is very close, being a little too blunt and stiff at the tip. Nos. 9, 13, 14, and 18 show the large, coarse, thick, heavy ears; No. 9, however, being best of the heavy ears, as it shows a slight break at the tip. No. 13 shows the wide, thick, heavy ear, yet short, fine neck or knuck of the ear where it is attached to the head. No. 14 shows the long neck, ear knuck, or attachment, indicating a loose, swinging ear. No. 18 is the long, loose, heavy ear of the scrub. No. 10 shows the thick, hard, round ear, partially erect and pointing forward. No. 12 shows a front view of the same kind of an ear, and pointing outward. No. 11 shows the upright or Berkshire ear, All ears shown are objectionable, except Nos. 7 and 8.

JOWL.

The jowl is No. 4 in Committee's, Ohio, Central, and Northwestern, and No. 5 in the American. All give it two points, except the American, which gives it three. In the illustration the standard jowl is represented by Fig. 1. Fig. 2 shows one objection—a loose, flabby jowl; Fig. 3 small, hard, thin jowl, and heavy cheeks; Fig. 4 flat; and Figs. 5, 11 and 15 close, small, Berkshire shaped jowls.

NECK.

In Plate No. I Fig. 1, 6, 7, and 8 shows the standard neck as attached to head, while the objectional ones are shown in Figs 2 and 3. Other illustrations of neck appear in next plate which we designate Plate No. 2.

In this plate, No. 7 shows the standard neck, while Nos. 1, 4 and 5 are nearly as good. In No. 1 the neck while high enough, is too long. Nos. 2, 3, 6 and 8 show flat top and poor necks.

THE BRISKET

Is not illustrated for the reason that in the hog it can not be seen at a side view, being covered by the foreleg, or nearly so, and in the examination should be judged by the touch of the hand. In the opinion of the writer it should be omitted from the standard and covered by the definition, chest. Hogs are not as prominent in this feature as cattle.

SHOULDER.

This point is No. 7 in the Committee's and Ohio Standards, and No.

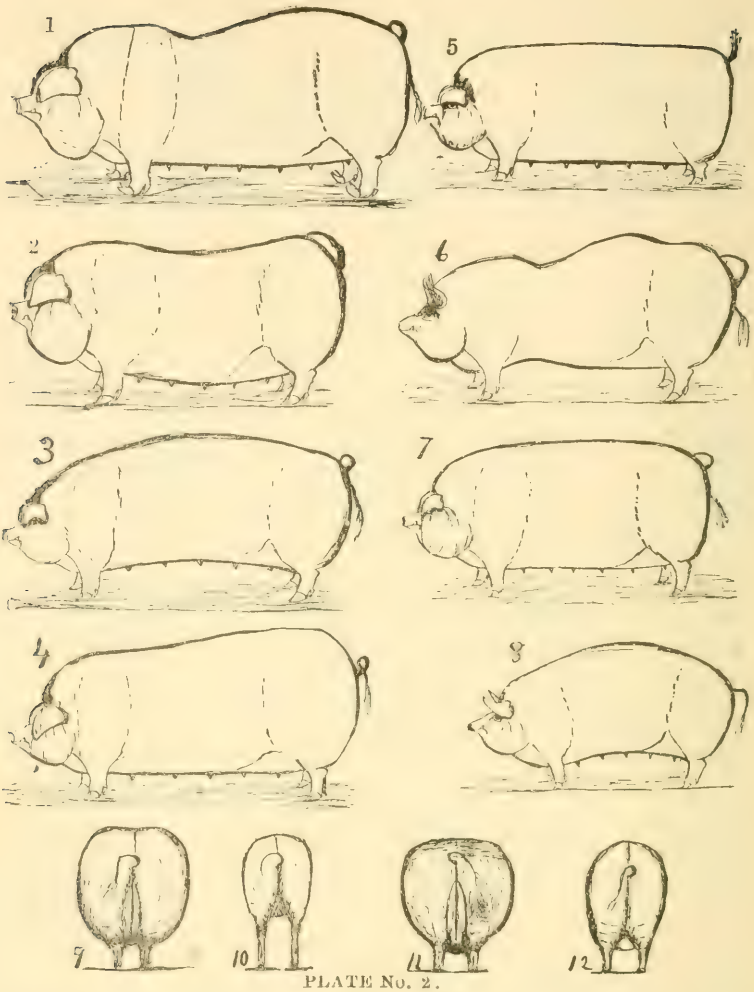


PLATE No. 2.

C in the American, Central, and Northwestern. The standard is represented by Fig. 5 in Plate 2, and Fig. 34, the defective by Figs. 1, 3, and 4. In Fig. 1 the shoulder-blades project above the back, while in Fig. 3 it is too narrow. Good shoulders are nearly always found where there is a large chest, or large girth about the heart, and are not difficult to breed, where the constitution of the hog is not neglected.

BACK.

The straight back is represented by Fig. 5, Plate 2, and the slightly

arched back by Fig. 7, although both are standard backs. The slightly arched back is the stronger of the two, and to our mind the more symmetrical. The defective backs are numerous and varied. Fig. 1 shows the curve or crease behind the shoulders, the rise at the loin; Fig. 2 the hollow or sway back; Figs. 3 and 8 too much arch; Fig. 4 the back low before and high behind; Fig. 6 the double curve, not often, but occasionally seen. In addition to these illustrations, there is the fish or narrow back, and the back with creases or wrinkles. To detect any evidence of fishyness, squat down either behind or in front of the hog, so that your eyes will be on a level with the back, and the sharp slope and depressions are easily detected. The back is one of the important constitutional and symmetrical points, and one of the hardest to get, and keep right. The breeder must always keep a sharp, accurate and discriminating eye on this part of the standard points, or he will be left. Whatever else you do, don't forget the back.

SIDES.

The Committee and Central give the sides 6 points, the Ohio 7, and the American and Northwestern 9, and all have the same description, except the American, which is simply, "deep." Fig. 7, in Plate 2, gives the standard, while all the others show the objections in a greater or less degree. The side should come out even with the shoulder and ham, so that a straight edge, stick or cane placed lengthwise along about midside, will touch the body or side all the way from shoulder to ham. A depression in the back, or a back too much arched is almost certain to be accompanied by a pinched and flat side. Again, the side should not be too long, as shown in Fig. 3; nor too short and cramped, as shown in Fig. 8. To view the side, a look broadside, endwise, and standing close to the animal and looking down, must be had, to get a correct estimate of the scale of points to which the animal is entitled.

RIBS.

The Committee's and Ohio assign 7 points, the American 8, and the Central and Northwestern 9, to this division. The ribs are so closely connected with the side, back, and chest or girth, that it would seem at first blush that the one involves the other and does not pass beyond. This, however, is only partially true, as external fat may make a full side or broad back, and the ribs be not sufficiently sprung. Usually, however, a wide, straight, or slightly arched back indicates a long, well sprung rib; a crooked or highly arched back always indicate poor ribbing and cramped chests. There is, however, another portion of the ribs, viz.: the short, or floating ribs, that approach the loin, need attention. There should be but little space between the last rib and upper and forward point of the ham.

LOIN.

All the standards, except the American, give this division 7 points, and the latter 10. All use the same discription, "broad and strong."

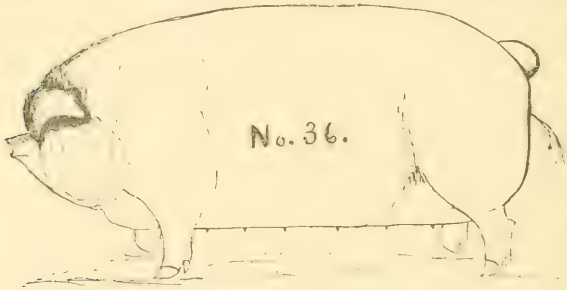
except the American, which describes it as "wide and full." This division is represented only partially by the top of Figs. 9, 10, 11 and 12. Of these, 9 and 11 being standard, and the others objectionable. On side view, the dotted lines in 7 indicate width of the loin, while 2, 3, 6 and 8 are the objectional ones. This division is imperfectly shown, but still gives the reader some idea of the requisites of the loin of the standard. To view this division of the standard a person must take a front, rear and top view, aided by touch; the latter test to ascertain the firmness and muscular strength of the part.

BELLY.

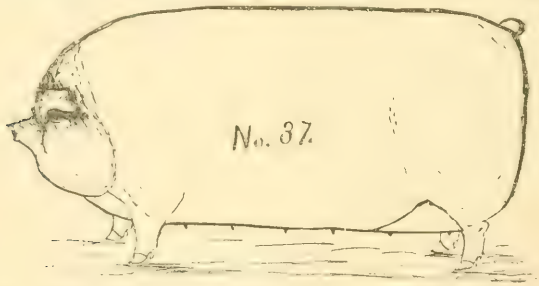
The Committee and Central each give 4, the Ohio 5, American 3, and Northwestern 5 points to this division, and all have the same discription. The standard is illustrated in Figs. 1, 4, 5 and 7, while Fig. 2 shows the swayed or dropping belly; Figs. 3 and 8 the drawn up and pinched belly; Fig. 6 the forward part only, pinched. The belly should be full and stand out even with the sides; and to be observed properly, the viewer must have a side and end view; the latter can be obtained by squatting down so as to get the line on sides and underneath. The full, wide belly indicates roomy body cavity for the bowels and good fattening qualities.

FLANK.

All the Poland-China standards assign to this division 3 points, and all



describe it in the same words, viz.: "Well let down." Fig. 37 shows

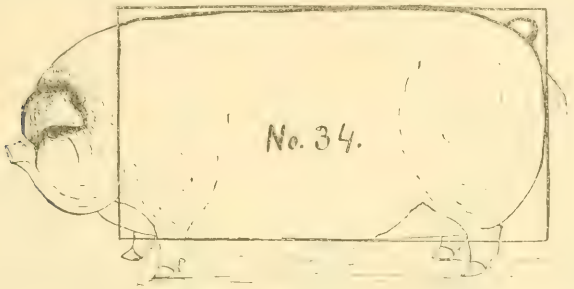


the standard flank, and Fig. 36 the high cut and pinched, objectional

one. This, though usually considered a minor division, is really one of considerable importance, as when full and low, it indicates plenty of room for smaller bowels and bladder, while a pinched or high cut one indicates a cramped condition of the back part of the cavity of the body.

HAM.

To this division the Committee, Central and Northwestern assign 10, the Ohio 9, and the American 12 points. As will be observed, this is considered one of the most important divisions, because it is one of the most profitable, and at the same time one of the hardest to keep right. The standard ham is represented by Fig. 9, in Plate 2, as a rear view, and by Fig. 34 as a side view. This (Fig. 34) also presents the standard



body, shoulder and ham. The perfect hog should come as near as possible for flesh and blood to do, of filling a parallelogram, as drawn over the body of Fig. 34. The sides and ends are full, but on the corners there must of necessity be some little space. Fig. 37 and Figs. 5 and 7, Plate 2, show the back part of ham too straight and not sufficient slope on rump. A rear view of the flat rump is also shown in Fig. 11, Plate 2. Fig. 36 shows the side view of a rump too steep and ham not sufficiently down on hock. Fig. 9, Plate 2, shows the full twist, and size carried well down on hock. Fig. 11 shows width above in rear view, but narrowness at and just above hocks. Fig. 10 shows the scrub ham, divided almost up to the tail. Fig. 12 shows the narrow, flat, sharp pointed ham. As will be observed, all the figures on Plate 2, show a variety of defects, which will be readily seen without especial mention, No. 4 being nearly the standard.

LIMBS.

The Committee assign 7, the Ohio 8, and the Central, American and Northwestern each five points to this division. We respectfully suggest that 8 points are few enough for a division which may rightfully be termed one of, if not, the most important in the standard, but as we are dealing with the standards as we find them, rather than making suggestions as to their structure, we will direct the attention of the reader to some of the illustrations which we have prepared:

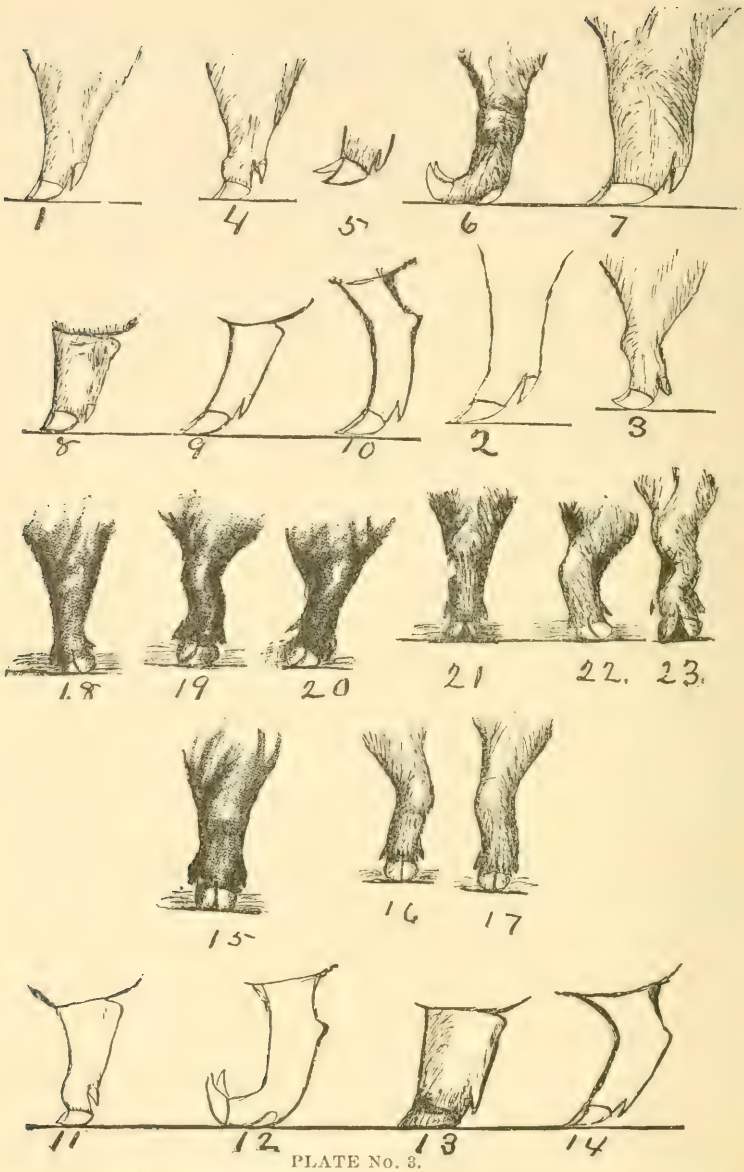


PLATE No. 3.

Fig. 1. Plate 3. shows side view, and Fig. 15 front view of the standard

foreleg. Fig. 2 shows the long, slim front leg and the long, weak pastern joint; Fig. 3 the bucked knee; Fig. 4 the bucked pastern joint; Fig. 5 the wide spreading toe; Fig, 6 the crushed or mashed foot, commonly spoken of as broke down on feet; Fig 7 the large, coarse leg that does not taper sufficiently; Fig. 16 shows front view with knee bucked and crooked inwards; Fig 17 shows two curves, one inward at knee, and outward at ankle or pastern joint; Fig. 18 pastern joint turned outward so as to walk on side of foot; in Fig. 20 the curve is at the knee and pastern joints; Fig. 19 has a double curve at knee and below and deformed foot; Fig. 21, front view of spreading toes; Fig. 22, crook in upper part of the leg, and deformed foot; Fig. 23, leg badly curved and spreading toes. The most common defects are such as shown by Figs. 2, 3, 5, 6. 16 and 22. Some times the foreleg at the knee bends outward, but this is uncommon, in fact rarely seen.

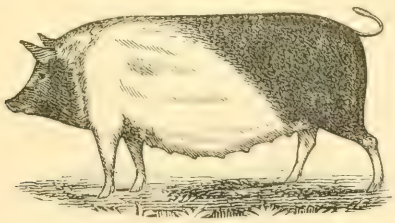
Hind Legs.—Fig. 8 illustrates the standard; Fig. 9 the slim; Fig. 10 the crooked, slim, and long shank above hock; Fig. 11 the bucked pastern; Fig. 12 the mashed or broken down pastern—long, slim leg, and long shank above hock; Fig. 13 the large, coarse leg; Fig. 14 the crooked hind leg.

These illustrations, although far from being artistic or perfect in design, convey to the reader the form of standard and objectional limbs. This division of the standard can not be too closely observed in selecting breeding animals.

There is another important point not illustrated, and that is, long, slim feet; they are not so firm nor strong as the short, round hoof. Feet and legs are not only important to have right, but will be found to give the breeder more trouble to get, and keep them right, than any other division of the standard points.

COLOR, HAIR, SYMMETRY,

And some other divisions are not illustrated, not because they are all unimportant, but because they are difficult to show up by aid of drawing.



SCORING BY THE STANDARD.

Expert judging with score card of standard points, especially in swine departments at State and county fairs, is comparatively a new method, but must soon become common. It is because both the standard and score as methods are new, that we have thought it desirable to write a chapter to assist breeders and judges in understanding and applying the new methods. To aid in this instruction we have prepared a number of illustrations, which we hope, with comments thereon, may benefit the public.

We do not assume that our ideas and instructions are infallible, nor beyond criticism, but they will at least furnish a starting point upon which criticism and discussion may build and grow, and which will end in correct and intelligent work by *experts*.

The proper use of the score card is not a gift to any man or set of men, but is something which will require much thought and study. The first efforts must of necessity bear more or less evidence of imperfection, but time, care, a quick, discriminating eye, patience, love of the business, and common sense will place the operators upon a high and skillful plane, which will make the new methods highly satisfactory to the public, and consequently to the managers of fairs. Every man who assumes to use a score card is not an expert, nor is every man who assumes the position of an expert entitled to that honor. The expert must know what a good hog is, and by practice familiarize himself with the use of the score card; he must be honest, and have the courage of his convictions; he should be cool, level-headed, patient and painstaking, yet quick, prompt and reliable in judgment, and then a close, careful student in his profession. Above all else he should not score too high. We think the best hog we ever saw ought not to score over *85 points*, perfection being 100.

We first present our readers with an illustration of a standard hog, in outline, upon which we have indicated the location of the standard divisions by numbers. It conforms to the standard prepared by the committee appointed by the National Poland-China Swine Breeders' Association. We insert on the next page cut and standard divisions.

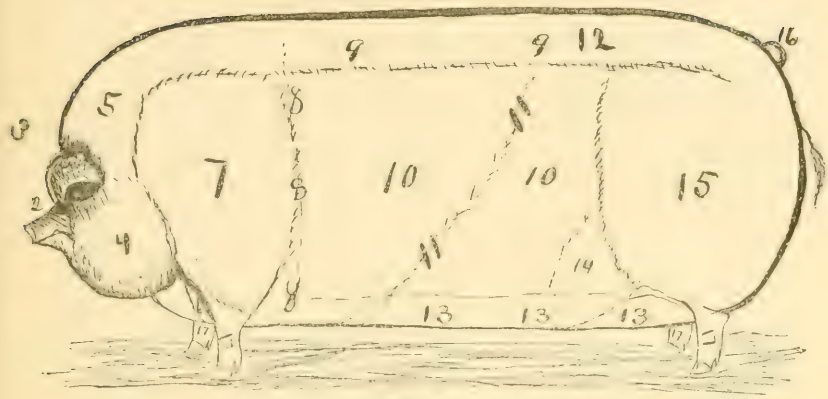


Fig. 50.

THE COMMITTEE'STANDARD.

1.	COLOR—Dark spotted or black	3
2.	HEAD—Small, broad, slightly dished	5
3.	EARS—Fine and drooping	2
4.	JOWL—Neat and full	2
5.	NECK—Short, full, slightly arched	3
6.	BRISKET—Full	3
7.	SHOULDER—Broad and deep	6
8.	GIRTH AROUND HEART	11
9.	BACK—Straight and broad	7
10.	SIDES—Deep and full	6
11.	RIBS—Well sprung	7
12.	LOIN—Broad and strong	7
13.	BELLY—Wide and straight	4
14.	FLANK—Well let down	3
15.	HAM—Broad, full and deep	10
16.	TAIL—Tapering, not coarse	2
17.	LIMBS—Strong, straight and tapering	7
18.	COAT—Thick and soft	3
19.	ACTION—Prompt, easy, and graceful	5
20.	SYMMETRY—Adaptation of the several points to each other	5
	Total	100

One hundred points constitute the standard, which is divided into twenty heads or divisions, and to each division is assigned a number of points. Each division is amplified and explained by what is termed, "Detailed Description," which includes "Objections." These are added by the committee as aids in applying the standard. [The "detailed" we copy as we comment on each division.] In addition, there is added what are termed, "Serious Objections and Disqualifications":

SERIOUS OBJECTIONS:

FORM—Small growth; upright ears; small, cramped chest; crease back of the shoulders, so as to readily be seen; deformed and badly crooked legs; feet broken down so that the animal walks on pastern joint and dew claws.

DISQUALIFICATIONS:

CONDITION—Excessive fatness; barren; deformed; unsound or diseased; ridgling or one seeded.

SCORE—A score of less than sixty of the standard.

PEDIGREE—Lack of eligibility to record.

COLOR.

No. 1 is color, and 3 points are assigned to it. The description is: "Dark spotted or black;" and the detailed description as follows:

1 COLOR—Black, or dark spotted with white points; (sandy spots and speckled color shall not argue impurity of blood but are not desirable.)

The first, "dark, spotted or black," is not very definite, but is aided somewhat by the detailed description, and by the objections, which are given as follows:

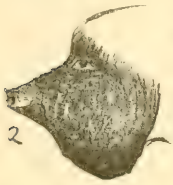
OBJECTIONS—Solid black, or with more sandy or white than black hairs over the body.

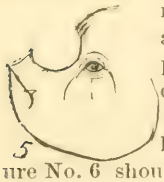
The expert has now the standard, explanations and key; the points are three. If the animal is solid black, cut 1 point; if one-third white, cut 1; if one-third sandy, cut 1½; if more sandy than black, cut 2½; if more white than black, cut 2 points.

HEAD.

The standard head is illustrated as follows (Figure 1), and should have the full 5 points, and no cut. The objections in head are as follows: Coarse, as represented by Fig. No. 4. This head should be cut 3 points, for it is not only thick and coarse, but it is raised on the nose when it should be dished, and the snout is coarse and thick, and includes at least two of the objections. Figure 3 is another and common objection. It is too long, straight and coarse, and narrow between the eyes. It should be cut 3 points. Another objection is "long and narrow," as shown by Fig. 2. It is also too narrow between the eyes, and has the fine muzzle, but not so much length as Fig 3. It should be cut 2 points. Figure 5 shows a coarse, heavy head and thick muzzle, which is too much dished, and should be cut 3 points. Figure 17 is another illustration of dish face—not so sharp a curve as Fig. 5, nor so coarse. and should not be cut more than 2 or 2½ points. Figure 6 is another head that is a comparatively good one, and should be scored lightly. It is not quite dished enough, and a little heavy at the muzzle. Figure No. 6 should be cut 1 point. Figure 10 is another form of face, and not an uncommon one, but it is too straight and coarse, and should be cut 1½ to 2 points. By referring to page 134 in chapter on standards,

Fig. 1.





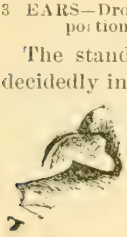
the reader will observe Fig. 9, as showing a straight, coarse, bony face. This should have a cut of 2½ points. No. 14, a still larger and more bony face, should have a cut of 3 points. No. 11, same plate, is a fairly good face, but too long, and hardly sufficient dish, and should be cut 1 point.

EAR.

The next division in order is the ear, and the committee have assigned it 2 points. Its description is, "fine and drooping," and is detailed as follows:

3 EARS—Drooping, fine and silky; pointing forward and a little outward; well proportioned to size of body.

The standard is represented by Figs. 7 and 8, with the preference decidedly in favor of No. 8, which is what may be called a fancy ear, having a short knuck, ear carried up and forward, and breaking abruptly at the tip. Fig. 6, in Plate 1, is nearly, or quite as good as Fig. 7, except that it lies too close to the head, and the point stands in too much over nose. 8 come too close together. We would suggest ½ off on 6 and 7. The detailed objections are:



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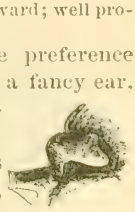
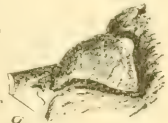


OBJECTIONS—Too large and coarse; thick, lopping; lying too near the face; stiff, erect, or too round.

The first objection is shown by Fig. 13. This is a coarse, large ear, yet short knuck. We cut it 1¼; Fig. 14, Plate 1, is large, coarse, thick, loosely hung, long attachment, and should be cut 1½; it is a swinging loose, flabby, barn-door ear that is hard to correct, and unless the hog has a number of other good, strong points, should constitute a serious objection to the hog carrying such ornaments. Figure 9 shows an objectional ear, but not so bad as many others; it is a little broad and thick, hangs too close to face, but breaks a little at tip, and has a fine attachment; this should be cut 1 to 1 ¼ points. Figure 10 shows the round, stiff ear, that stands up, and as it is a hard one to correct, cut it 1¼. Figure 12 shows the same kind of an ear, standing higher up and out from the face, a bad head and ear to correct; cut it 1½, and the same cut should be made, if not of 1¾, for the ear shown in Fig. 12. In the Berkshire Fig. 11 is a standard ear, and nearly a standard face, jowl and eye, while Fig. 10 in the Berkshire should be cut 2 points on ear, and 2½ points on face. Figure 17 comes near being a standard Berkshire face. Figure 13 shows nearly the standard head

13



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12

11

and ear of the Jersey Red, and Fig. 14, Plate 1, an objectional head and ear for the last mentioned breed.

JOWL.

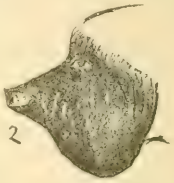
The jowl is next in order, and the standard is represented by Fig. 1, and is entitled to 2 points. The description is, "neat and full." The detailed description is:

4 JOWL—Full, firm, and neat; carrying fullness well back to shoulder and brisket.

The objections are:

OBJECTIONS—Flabby; light; thin in cheek, tucking up under the neck.

The first and third objections are shown by Fig. 2. The jowl is long, wedge-shaped, flat, and thin in cheek, and should be cut one point. The second objection is represented by Fig. 3, where there is little, if any flesh on the jaws; it is also illustrated by Fig. 11, of Plate 1; these should be cut 1 to 1½, as the development may be greater or less. Then there is another jowl that is round, hard, small, and cut up high in front of forelegs and shoulders; a cut of ¾ to 1 point should be made as the defect is great or slight. The high cut is shown in back part of illustration No. 2, above.

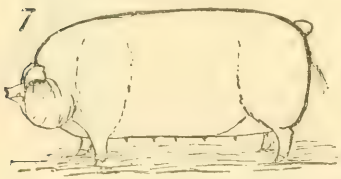


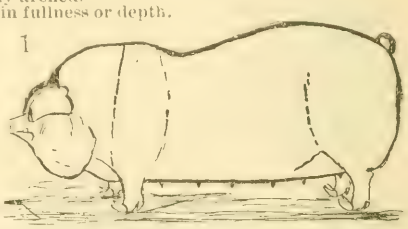
NECK.

The next division in order is the neck, 3 points, and it is described as "short, full, slightly arched," and the detailed description is:

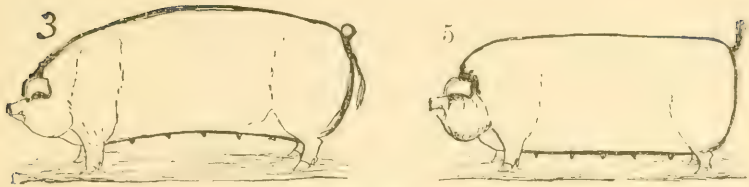
5 NECK—Full, deep, short, and slightly arched.

OBJECTIONS—Long; flat; lacking in fullness or depth.





The standard is shown by Figs. 1 and 5 Plate 1, the outline cut at beginning of this chapter, and by Figs. 5 and 7, Plate 2. Fig. 3, Pl. 1, shows the flat neck, as does Fig. 3, Plate 2. Fig. 1, Plate 2, shows a long, thin neck; cut it 1½ points. Then there is the short neck, flat on top; cut 1 point. There is also a thin, yet deep neck, which should be cut at least 1 point. If neck is flat on top, & thin through sideways, and cut up high underneath, it shouldbe cut 2 points. If neck, in addition to the last, is long, cut 2½ points.



BRISKET.

The next on the list is the brisket. This is shown on large cut, Fig. 50. The standard assigns to this divison 3 points, and it is described as "full," while the detailed description is as follows:

6 BRISKET—Full; well let down; extending well forward and on line of belly.
OBJECTIONS—Narrow or tucked up.

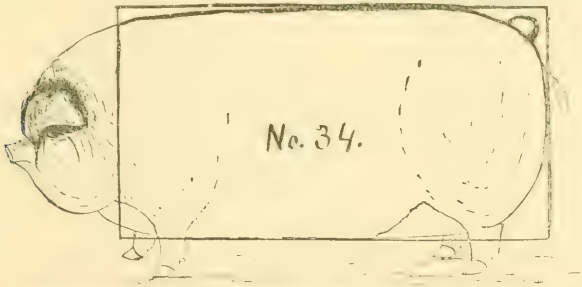
This point is so difficult to illustrate that we have not attempted it, except to show the location. Its size and shape can only be judged by feeling with the hand, and should be rounded from side to side, rather than flat; there should be good width between the forelegs. If flat and small, cut 1 point; if too round and narrow, cut 1½ points; if the point of the breastbone does not come up even with or forward of foreleg, cut 1 point

SHOULDER.

The shoulder is next in order. This division has assigned to it 6 points. It is described as "broad and deep," and the detailed description is as follows:

7 SHOULDER--Broad; deep; thickness in proportion to the side and ham; full and even on top.

The standard shoulder, side view, is represented in Fig. 34, and the top



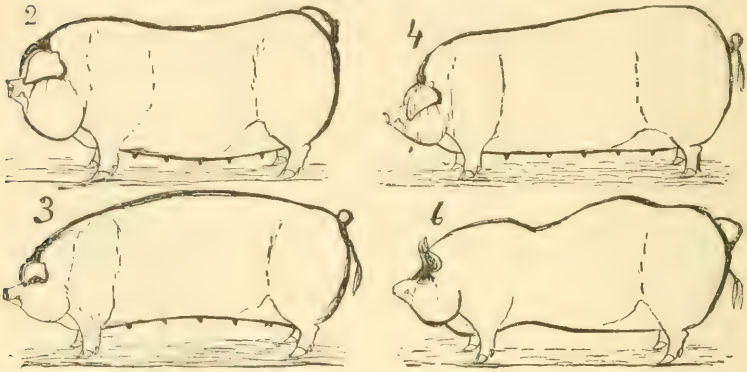
view by this illustration, which presents the shoulders filling out even with the side and ham. This last cut is the view obtained by standing close up to the animal and looking down upon its back. The figure shows the back of the hog, and the parallelogram around the outside is to show the manner in which the sides should stand out in straight lines.

Fig. 51.

Fig. 34 shows the lines on top from side view and the manner in which the outline of the animal should fill the parallelogram.

The objections are:

OBJECTIONS—Lacking in depth or width; thick beyond the line of side and ham; blade too prominent.



Figs. 2, 3 and 6, Plate 2, shows a side view of the shoulder lacking in depth. Fig. 2 should be cut 2; Fig. 3, 2½ and Fig. 6, 3 points. Fig. 4, plate 2, also shows a short shoulder, making the hog lower before than behind, but not projecting above the line of the back and should be cut 1½. The accompanying cut shows a top view of deficient shoulders, shown by side view in Fig. 6, in connection with side view of Fig. 6, receive a cut of 3 to 4 points.

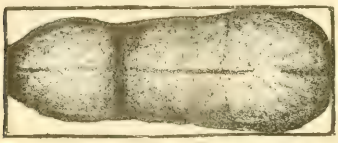
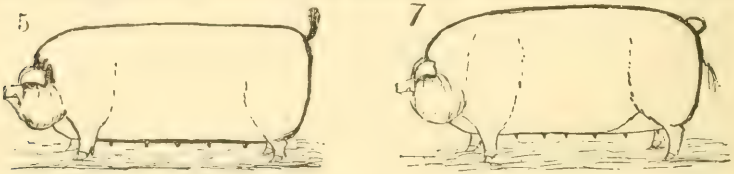


Fig. 52.

GIRTH AROUND HEART

Is the next on list, and to this division is assigned 10 points. The location of this division is shown by dotted lines and Figures 8, 8, on Fig. 50, which, together with top view shown by Fig. 51, shows the standard



hog. Figs. 5 and 7, of plate 2 also shows standard, side view. The detailed description is as follows:

8 GIRTH AROUND THE HEART—Full back of shoulders; ribs extending well down wide and full back of foreleg

The detailed objections in this division are as follows:

OBJECTIONS—Less than flank measure or length of body from top of the head to the root of the tail, or creased back of shoulders.

Fig. 1, Plate 2, shows this defect strongly, and Fig. 6, Plate 2, is still worse, as the curve is both above, and below and should disqualify.

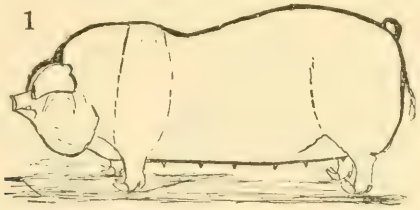


Fig. 2, Plate 2, is not so bad but still shows a defect and should be cut 3 points. Fig. 4, Plate 2, should be cut 2½, and Fig. 3, Plate 2, should be cut 3 points. Fig. 53, although same size back of shoulders as around flank, shows a defect in that it does not show as much girth measure as length of body, hence should be cut 3 points. Fig. 52 and 1 and 6 in Plate 2, should be considered together in estimating disqualification.

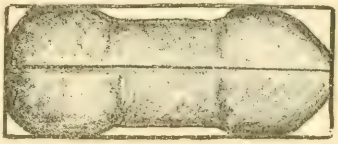


Fig. 53.

BACK.

The next division in order is the back, and to it is assigned 7 points. It is described as straight and broad, and the detailed description is as follows:

9 BACK—Broad, straight, or slightly arched, carrying width well back to hams, and of medium length.

Figs. 5 and 7, in Plate 2, and Figs. 50 and 51 all represent standard

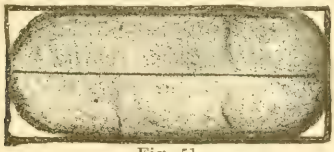


Fig. 51.

Fig. 54.

backs. Fig. 5 is side view of the straight, Fig. 7, slightly arched, while Fig. 51, a top view of perfect back. Fig. 54 represents a rear view of the standard back. Fig. 34, page 147, also represents a standard back, from a side view. The detailed objections are as follows:

OBJECTIONS—Narrow; creasing back of shoulder; narrow across the loins; swayed; too long; sunfish shaped.

The first objection is illustrated by Fig. 53, showing a narrow back, that is, it does not fill out as wide as shoulders and hams. Such a back should be cut 2 points, and if in addition is hollow, 3 points, and if coupled with a crease or sink behind shoulders on top, should be cut 4½ to 5 points. Fig. 52 is another narrow back, showing a slight crease behind shoulders and narrower at shoulders than loin, and

should disqualify, especially when taken in connection with side view, shown in Figs. 1 and 6, Plate 2. Fig. 55, shows back, narrow, tapering from shoulders to loin, and slightly fished-back; should be cut 2 to 2½ points as a back; would be more, but the loin deficiency is

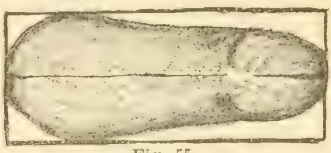


Fig. 55.

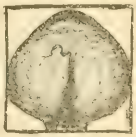
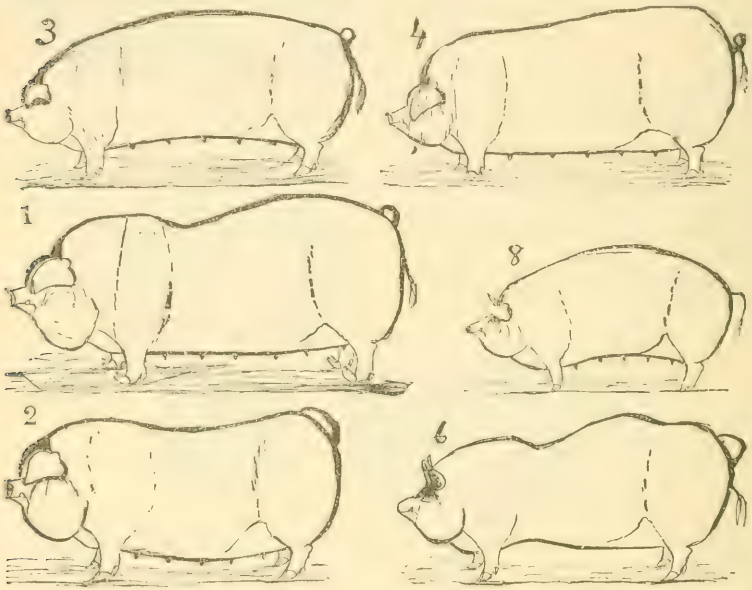


Fig. 56.

covered by another division. The back in Fig. 8, Plate 2, is the highly arched back accompanied by feet drawn too close together, and should be cut 2½ to 3½ points, while the arch in Fig. 3, Plate 2, not so bad,



would cut 1½ points, but if accompanied by a fish back as shown by Fig. 56, which is the rear view, would cut 4½ to 6 points. Figure 2, Plate 2, shows the hollow or sagging back; would cut 1½ to 2 points; in addition, if fished-back, would add 1 to ½ more, owing to the extent of defects named; or, if creased and fished, would cut 4½ to 5½ points. Figure 4, Plate 2, is low before, straight on shoulders and gradually rising to loin; would cut 1 point for this, and if narrow at either or both ends and fished in addition, would cut 3 to 4½ points. The varieties of backs are almost as numerous as hogs, and the expert

must exercise his judgment in this as in all other divisions in the score.

LOIN.

The next in order is the loin, assigned 7 points, described as "broad and strong," and the detailed standard and objections are as follows:

10 LOIN—Broad, strong and full.
OBJECTIONS—Narrow and weak.

The standard loin is shown by top view in Fig. 51, side view by Fig. 50, and by rear view in Fig. 54. This is an important division and one

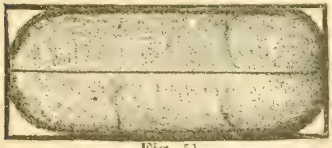


Fig. 51.

Fig. 53.

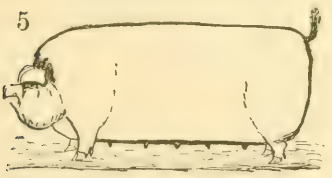
hard to get right and keep so. The objections are shown by top view, Fig. 55, and by rear view, Fig. 56. These figures show almost or quite a disqualification and should be cut 5 points. There is another not so bad shown by Fig. 53, and should receive a cut of from 1½ to 4 points, as the question of sharp or fished appearance presents itself. If the loin is broad and raised above the line of the back, although broad, it should be cut 1 to 1½ points. If too long from hams to first rib, a cut of 1 to 1½ points, even if broad.

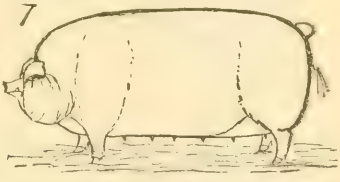
Fig. 54.

SIDES

Is the eleventh division and has assigned to it 6 points. It is described as follows: "Deep and full," and the detailed description is:

11 SIDES—Full, deep, carrying the size well down and back.





This division of the standard is shown in Fig. 50 (page 143), Fig. 34 (page 147), and Figs. 5 and 7, plate 2. The detailed objections are:

OBJECTIONS—Too round or flat; shallow or thin at the flank.

The round, narrow side is shown in Figs. 3 and 8, Plate 2. Cut Fig. 8, 3 points and Fig. 3, 2 points, as it has good length although narrow. Figure 2, Plate 2, shows short side and pinched flank and should be cut 2½ points. Figure 6, Plate 2, shows the narrow, ill-shaped side and tucked flank, and should be disqualified; Fig. 4, narrow in front, should be cut 1 to 1⅓ points.

RIBS

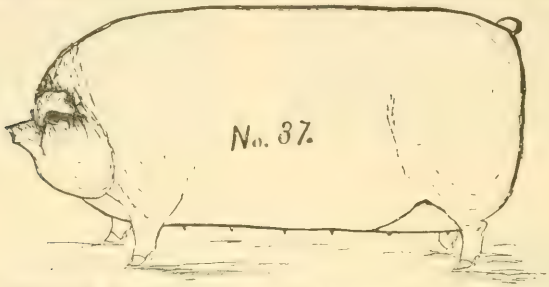
Is the next in order, and to this division is assigned 7 points. The description is "Well sprung," and the detailed description is as follows:

12 RIBS—Well sprung and long; carrying fullness and depth well back.

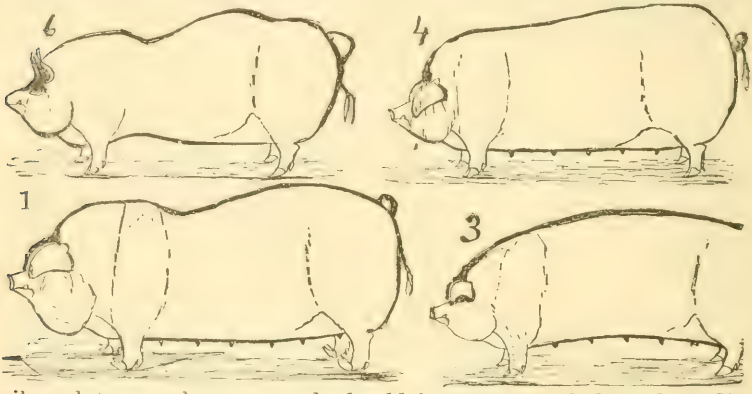
The position of ribs is indicated by dotted lines, 11, 11, in Fig. 50, (page 143), and the broad, well sprung ribs by Figs. 50, 51 (page 151), showing the standard ribs from side and top views. The objections are:

OBJECTIONS—Too flat; curve of rib too short.

The flat ribs are shown by top view Fig. 53, and side view by Fig. 37.



They should be cut 2 to 2½ points. The sharp curve ribs are shown in Figure 6, and should disqualify. In Figure 1, there is a short,



rib and too much curve and should have a cut of from 3 to 3½ points. In Figure 4, ribs are too short, cut 2 to 2½ points; Figure 3

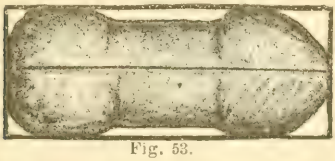


Fig. 53.

Fig. 55.

should receive a similar cut of 2 to 2½ points. The short, sharp

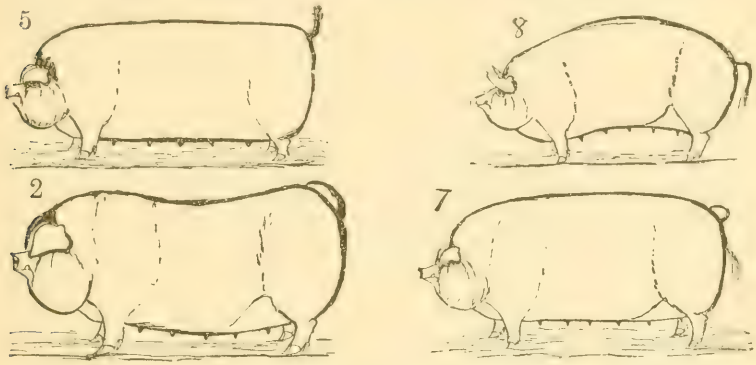
curved, floating ribs are shown by top view in Fig. 55 and rear view by Fig. 56 (page 151), and should receive a cut of 2 to 3 points.

BELLY.

The next division in order is the belly, and to it is assigned 4 points. The description is "Wide and straight" and the detailed description is the same. The side view is represented by Figs. 5 and 7 in Plate 2, and by Fig. 50 (page 143), and the rear view by Fig. 54 (page 151). The detailed objections are:

OBJECTIONS—Sagging; narrow.

The first is shown by Fig. 2, and as the sag is slight, should have



a cut of 1 point. If more prominent, that is, the sagging is worse, the cut should be more in proportion. The narrow belly is shown on side view by Figs. 3, 6 and 8, and rear view by Figure 57, which shows the narrow belly. Fig. 8, Plate 2, should be cut 2½ to 3 points, as it is narrow and drawn up; Fig. 6 should be cut 2 to 2½ points, and Figure 57 cut 1½ to 2 points. This division is one very difficult of illustration and requires close observation by eye and the application of the hand.

Fig. 57.

FLANK.

The next division is the flank, which has assigned to it 3 points, and is described as "Well let down," The detailed description is:

14 FLANK—Well let down, and full.

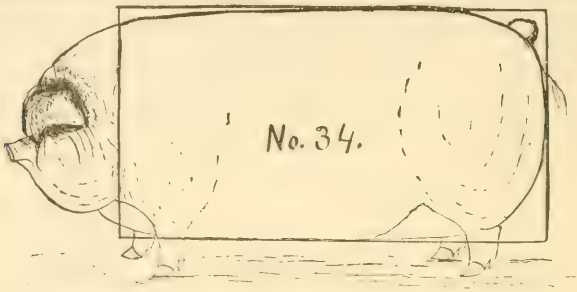
And is shown by Figs. 50 (page 143), and 4 and 7, of Plate 2. The objections are:

OBJECTIONS—Thin; tucked in; cut up too high,

Fig. 1, Plate 2, shows flank a little too high and slightly tucked, and should be cut 1 point; Fig. 2, Plate 2, higher and more tucked, 1¼ points; Fig. 3, Plate 2, tucked only, cut 1 point; Figs. 6 and 8, should be cut 2 to 2½ points, as they are high, seriously tucked and thin.

HAM.

The next in order and one of the most valuable divisions is the Ham. Here lies the high priced meat and one of the most difficult divisions to get and keep right. It has 10 points assigned to it. The standard ham



by side view, is shown in Figs. 50 and 34, and the rear view by Fig. 54, and top view by Fig. 51. The standard ham is described as, "Broad, full and deep" and the detailed description as follows:

15 HAM—Full, broad, deep; holding width and coming well down over hock.

The detailed objection is as follows:

OBJECTIONS—Narrow, short; too deep at the rump, and cut up too high in the crotch.

The worst ham is shown by side view in Fig. 38 and Fig. 10, rear view; would cut such hams 8 points. The next poorest is shown by Fig. 12 and should be cut 7 points. Fig. 56 shows defects as follows: Narrow at top, steep rump and curves in too sharply at hock but is good at stifle. This shaped ham should be cut from 4 to 5 points and hams approaching it closely from 4 to 6 points. If the top is not so bad, cut 4 points; if top is bad and stifle not so good, cut 5½ points, and if in addition the bottom is narrow and high off of hock, cut 6 or 6½ points. Figure 57 is a fairly good top but is hardly full enough on sides, is flat from tail to top of rump and is deficient in stifle, crotch and hocks; cut it 4 points. Figure 58 is a nearly standard rear view but does not fill up quite enough at top. One point is enough of a cut for this figure. Figure 59 is a rear view that is deficient on top and next to the hocks, and the swell of the ham at stifle commences

Fig. 38.

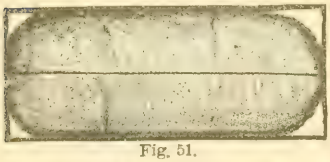


Fig. 51.

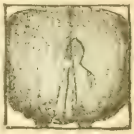


Fig. 54.

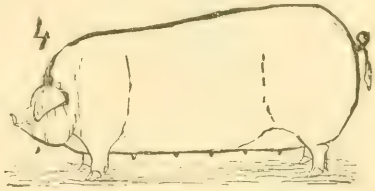
forward; should cut this figure 2½ points. It may be well to say here that all the rear views that are enclosed in a square are only intended to show to the hocks—no part of the leg from hocks down, is

Fig. 57.

Fig. 58.

Fig. 59.

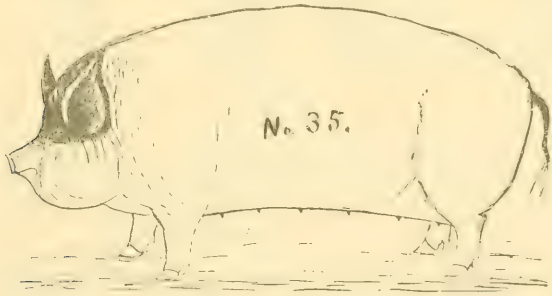
shown. Figure 5 shows the narrow ham, too straight behind and flat on top; this should be cut 3 to 3½ points. Figure 4 shows a good ham,



but is too steep just above tail and should be cut ½ to 1 point on that defect. The rear, side and top views should always be considered together in making the score and the whole cut made from all of the views, as the animal may fill out in the several parts of the hams.

TAIL.

The next division of the standard is the tail, and to it is assigned two



points. It is described as follows: "Tapering; not coarse." It is described in detail as follows:

16 TAIL—Well set on; small, smooth and well tapered.

It is shown side view in Fig. 50 (page 143). The objections are as follows:

OBJECTIONS—Coarse, large, too prominent at the root.

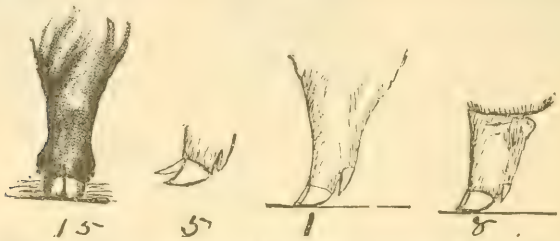
Fig. 4 shows too low down; Fig. 5, too high up, while Fig. 35 shows the tail large, coarse and thick; cut each figure 1 point.

LIMBS.

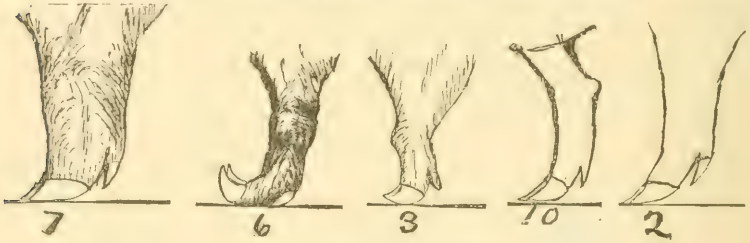
The seventeenth subdivision is limbs, and to this is given 7 points, and is described as "strong and straight." The detailed description is as follows:

17 LIMBS—Medium length; well set apart and well tapered; bone firm and flinty; not coarse; muscles full above knee and hock, pastern short, foot short.

Fig. 50 has standard limbs, and Fig. 1 shows the standard foreleg, side



view, while the front view of the standard foreleg is shown by Fig. 15. The standard hind leg is shown, side view, by Fig. 8. For a rear view we could not draw one to suit our notions, and therefore, do not present an illustration. The legs should not be close together, nor should

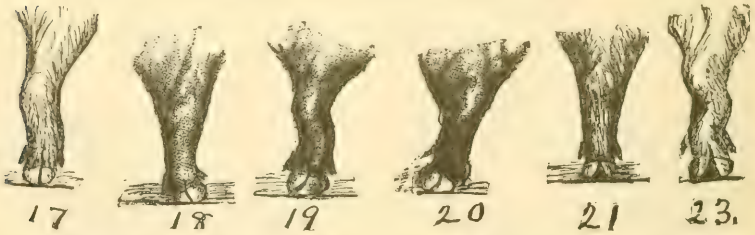


the hocks turn out or in but should be straight and firm.

The objections are described as follows:

OBJECTIONS—Long, slim, coarse, crooked; muscles light; pastern long, slim, or flat; feet long or sprawling.

We will first illustrate the defective forelegs. Fig. 2 shows the side



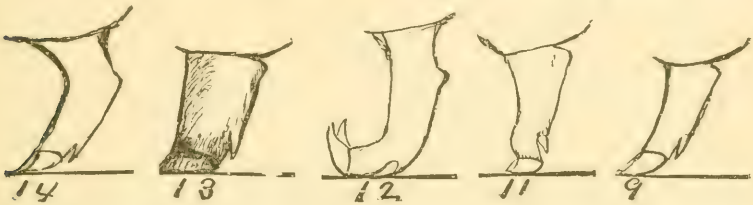
view, and Fig. 21, Plate 3, the front view of the long, slim, yet straight foreleg; for these figures cut 2½ points; if it shows the bucked knee

(Fig. 3), cut an additional 1½, making 4; and if it in addition has the knock knee (Fig. 10), cut 1 to 1¼ more; if it is the long, slim, and down in pastern joint, as shown in Fig. 6, cut 6 points; if long and slim, and bucked in pastern, cut 4 points; if as shown in Fig. 17, cut 5 points; if as shown in Fig. 19, cut 6 points; if as shown in Fig. 18, cut 3 points; if as in Fig. 20, cut 3½ points; as in Fig. 21 and 5, cut 3½ points; Fig. 23, cut 6 points; Fig. 7, 2½ points; and if in addition, it is bucked, add 1½ more; and if down in pasterns, add 1½ to 3 more, as the deficiency is great or small. Figure 16 is quite a common defect, and Fig. 3 will be found often.

The scorer must of course exercise in this division, as in all others, great care and combine the cut of the different deficiencies. No two legs, not on the same hog, will hardly be found alike, and it will require more practice and closer observation to arrange the score on legs and feet than any other division of the standard.

HIND LEGS.

Some of the hind leg deficiencies will next be illustrated by side views. Figure 9 shows the slim leg, with slightly too much back pitch; should be cut 2 points. Figure 10, slim, crooked, and long above hock;



cut 3½; Fig. 11, cut 1 point; Fig. 12, cut 7 (all); Fig. 13, 2 to 2½; and Fig. 14, 3 to 3½ points. If the hocks turn in or out too much, a cut should be made of 1 to 1½ for this defect.

Most of these illustrations of deficiencies are *extreme ones*, and are so made as to put the scorer on his guard and to watch for the symptoms of each. There are but few animals, if carefully scored, that will reach sixty per cent. in this division. It is one of the most difficult for the breeder to get as he knows it ought to be, and more so to maintain it.

COAT.

The eighteenth division, coat, is given 3 points, and described as "thick and soft," and the detailed description is:

18 COAT—Fine, thick, and covering the body well.
OBJECTIONS—Coarse, bristly, harsh and wiry.

To illustrate these properly, or even approximatingly, on paper, is beyond our power, hence we have not undertaken it. The standard requires that the hair should be fine and thick. If the hair is coarse, a cut of 1 point should be made; if in addition there are bristles, add another cut, making 2 points. If the hair is fine and thin, cut ½ to ¾;

if coarse and thin, 1½ to 2; if thick, harsh and wiry, cut 1½ to 2 points.

ACTION.

The next in order is action, and to this division there are assigned 5 points. It is described as follows:

19 ACTION—Easy, prompt, fine and graceful.

It requires the hog to get up quickly, easily, and walk off with a firm, quick, vigorous and easy movement, without much motion of the body, and carrying the head well up. The objections are:

OBJECTIONS—Dull, sluggish, clumsy.

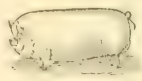
If the hog gets up slowly, and squeals when required to get up, cut 1 points; if it requires several efforts to rise, and stumbles in getting up, cut 2 points; if it walks a loose, swinging gait, giving the body a serpentine motion, cut 1 point; if the legs twist and turn out in walking, so as to make a blurred track with feet, cut 2 points; if the fore feet cross or lift over each other, as the hog comes toward you, cut 1 to 1½ points; if it stumble, as it attempts to increase its gait, cut 1 to 2 points; if it lifts its legs and feet slowly and heavily, cut 1 to 2 points; if the head is carried low, and the walk is dull and stupid, cut 1 to 2 points; if it turns slowly, and allows the feet to become twisted, rather than pick them up, cut ½ to 1 point.

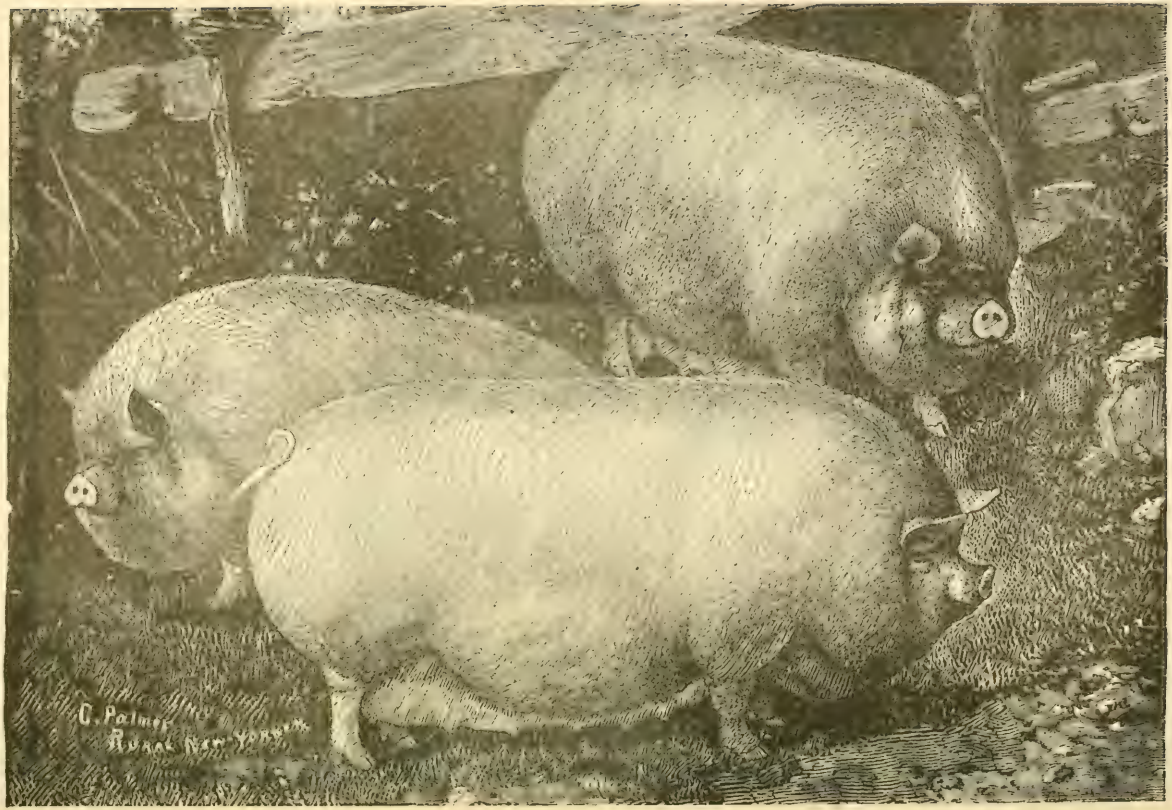
SYMMETRY.

The last division is symmetry, and has assigned it 5 points, and is described as follows: "Adaptation of the several points (divisions) to each other. The detailed description is:

20 SYMMETRY—An harmonious combination of the foregoing scale of points.
OBJECTIONS—Too much developed in some points and lacking in others.

We do not think we can add any information to the above definitions. A mastery of the other divisions, and a quick, discriminating eye, and a judgment to grasp the whole situation; or in other words, the capacity to judge a good hog by its general appearance, will take the correct or incorrect proportions. It is in this division that the old committee system has a show, and there is some room for a man to work his hobby, if he have one.

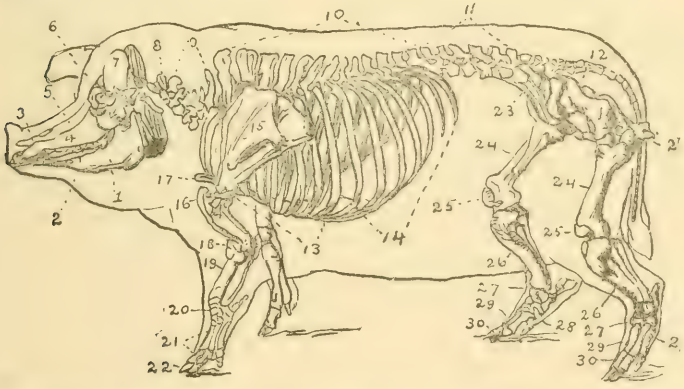



C. Palmer
Rural New-Yorker

ANATOMY AND PHYSIOLOGY OF THE HOG.

This chapter is not intended as a scientific one, and is not, therefore, intended for the veterinary, but for common people. Technical names are avoided and common ones used in describing the parts. We have not at length nor in detail attempted to make this chapter complete in the description of the functions of the various parts; on the contrary, given them in general terms.

In order that our readers may have a true illustration of the bones of the hog, and the proportion the skeleton of the hog bears to the external form, we have reproduced from "Jennings on Live Stock" the following illustration:



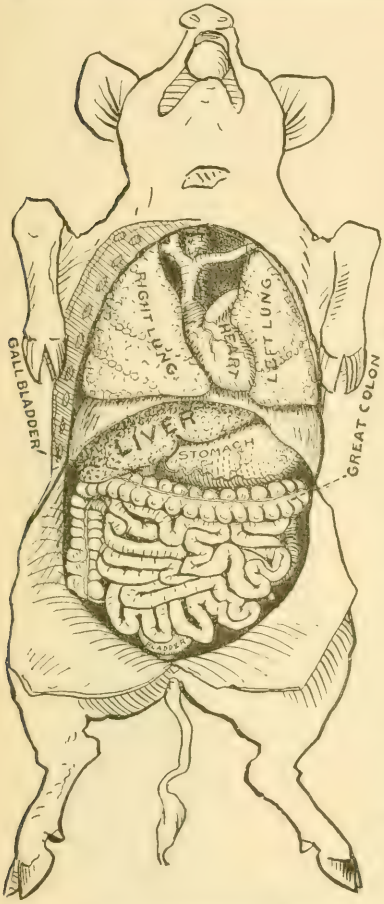
The parts of the skeleton are indicated by numbers, as shown in the cut, and the names of the various parts are given by the numbers, as follows: 1, the lower jaw; 2, the teeth; 3, nasal bones; 4, upper jaw; 5, frontal bone; 6, orbit or eye socket; 7, occipital bone; 8, first bone of the neck; 9, bones of the neck; 10, bones of the back; 11, vertebræ of the loins; 12, bones of the tail; 13 and 14, true and

floating ribs; 15, shoulder blade; 16, round shoulder blade bone; 17, breast bone; 18, elbow; 19, bone of the forearm; 20, navicular bone; 21, first and second bones of the foot; 22, bones of the hoof; 23, haunch bones; 24, thigh bone; 25, stifle bone; 26, upper bone of the leg; 27, the hock bones; 28, navicular bone; 29, first digits of the foot; 30, second digits of the foot.

A slight examination of the face of the hog demonstrates the strength of the head, neck and back, and its capacity for rooting. The snout of the hog is its spade, with which, in its natural state, it digs in the ground for roots, nuts, worms, &c. To render this implement as nearly perfect as possible, an extra bone is added to the nose (see No. 3) and connected with it by strong ligaments, cartilages and muscles, and is called the snout. The cartilage formation at the end of the nose is made strong, insensible and flexible, and for that reason well adapted for investigation. There is a large net work of nerves that run down each side the nose (but do not extend to the rooter) which furnish the hog with a peculiar power of scent, that detects food although buried several inches below the surface of the ground. No animal, except the dog has such an acute sense of smell as the hog.

The hog has fourteen double or molar teeth with which he grinds his food, six incisors or front teeth and two canines or tusks in each jaw. The incisors of the lower jaw project nearly straight out and are used as nippers to bite off grass and roots, shell off corn, and gather in the food, while in the upper jaw they are shorter and more like those in the horse, except the two corner ones, which resemble those of the dog. The tusks are used as weapons of defense. The pig is born with eight teeth, which are short and sharp. Of these the two foremost ones in each jaw are called incisors, and the others are tusks; they all look like tusks. On account of their outward direction and termination, they do not hurt the teats of the sow except when the pigs fight each other for a teat. In such an event the sow is likely to receive a cut from these little needle-shaped tusks. Their principal use seems to be to steady the tongue and assist in holding the teat in the mouth while nursing, and as a means of protection of the individual rights to the teat selected. In the course of eight to fourteen days after birth, there appears the first back or double teeth. At four weeks of age the four nippers appear in each jaw so that at this age the pig has eight nippers or front teeth, eight grinders or double teeth and four tusks. The nippers having got through the gums, remain stationary for some time and but slightly above the surface. This prevents their hurting the teats of the sow and allows the tongue to readily pass over them and around the teat. Soon after the nippers appear, the third grinder on each side of upper and lower jaw appears, and at from six to eight weeks these new molars or grinders and the nippers have so far developed as to enable the pig to subsist without nursing. Sometimes the tusks, instead of

growing outwardly as they should, turn inwardly, which will cause the pig to occasionally cry out as if in pain and prevent its thriving: when so found they should be pulled out. At the age of three months two additional incisors or nippers appear and with these all the milk or pig teeth are complete. With advancing age the teeth develop so that at six months of age their largest size is reached and the nippers present an evenly rounded front. At the age of six months the small teeth between the tusks and grinders appear — they are sometimes called wolf teeth; and also the first permanent grinders appear. The pig teeth are shed in the order in which they came. The nippers are shed with the beginning of the twelfth month, and at the end of the first year, at eighteen months the intermediate incisors, and at the end of the eighteenth month the permanent incisors and grinders or back teeth are complete. The full grown hog has forty-four permanent teeth, of which twenty-eight are preceded by pig teeth.



Here is a cut we have had prepared, showing the comparative size and location of the internal organs of the hog:

This cut explains itself and gives the reader the necessary information as to the relative size of each organ and the part of the body in which it is located, with the exception of the kidney, and that is shown in the cut on the following page, marked "k" with leaf-lard around it:

The cut on the next page presents a view of one-half of the hog. The chest cavity is hardly large enough in proportion to vertebra or back bone and bone and fat. For this illustration we are indebted to the *American Agriculturist.*

The brain is located in that portion of the head lying above the lower line of the eyes. It is larger in the hog, in proportion to the size of the

animal, than that of the ox or sheep. The brain of the hog is composed of two substances differing somewhat in appearance. The two parts perform different functions; the upper or lighter colored is the mind or reasoning power, while the lower is merely the recipient of the senses, such as sight, touch, smell, hearing, &c.

The spinal cord extends from the base of the brain through the backbone to the tail, forming two columns divided by a central line its entire length. Each part has a separate function, the lower column being connected with the voluntary motions and the upper with sensation and direction from the mind.

The neck contains what is commonly called the windpipe, through which the air passes to and from the lungs, and the gullet, through which the food passes from the mouth to the stomach, and the arteries and blood vessel that supply the head, etc.

The chest contains the lungs, heart and liver, as shown in the cut. The lungs form distinct bodies or lobes, the right one being the larger. Each portion or lobe is again subdivided, the right into three and left two lobes. The office of the lungs is to convert the venus, or dark blood into arterial, or red life-giving blood, by exposing it to the oxygen of the air in the lungs.

The heart has two sides, one devoted to circulation of blood through the lungs, and the other receives the blood from the lungs and pumps or forces it through the body. Each side is divided into two compartments, the one above and the other below and are called auricles and ventricles. The pulsations of the heart in swine are from seventy to eighty in a minute.

The stomach of the hog is much more simple than that of the ox or sheep. It has three coats; the outer one constitutes the common covering of all the intestines, the muscular or fibrous coat acts upon and mingles the food, while the mucous or inner coat, which is peculiarly developed in the hog, contains the little vessels which convey the gastric juice to the contents of the stomach and assist in converting the food into a fluid condition.

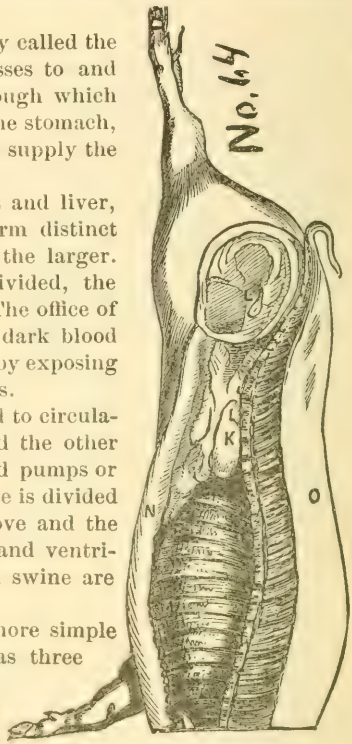


Fig. 2.—INSIDE OF CARCASS.

The intestines or guts of the hog closely resemble those of man. They are sixteen times the length of the animal and the length of the smaller is three times that of the larger. The intestines are composed of four coats: first, or outer coat; second, the muscular, which propels

the food onward by a serpentine motion; the third contains the mucous glands, and the fourth is soft and sponge like, containing the mouths of the glands. In the larger intestines the food is submitted to two fluids, one from the pancreas and the other from the liver. The action of these two fluids separate the nutritious from the worthless—the former assuming the appearance of a thick, whitish fluid, and the latter a yellowish, pulpy substance. As the contents pass on, the whitish fluid is taken up by small lacteal vessels and passes into the blood.

The liver is smaller in swine than in sheep. Its situation is shown in the cut. Its office is to receive the blood that is returned from the intestines, separate it from and secrete the bile, which passes to the gall-bladder, the blood then passing on to the lungs where it receives its oxygen and becomes arterial blood. The bile secreted, stimulates the mucous membrane, excites secretions and hastens the process of separation of the nutritious from worthless food. It also aids digestion by neutralizing acids, etc.

The spleen in the hog is quite long, slim and flat, being of nearly the same size and thickness its entire length. It lies on the left side and attached to the stomach. Its structure is spongelike in appearance and is made up of innumerable cells of almost every size and shape, yet it is firm to the touch and has a smooth exterior. Its color is a dark, deep, reddish brown. There is much dispute as to the office it performs, and we will not hazzard an opinion upon that subject. It has been removed from animals and they seemed to suffer no inconvenience therefrom.

The peritoneum is the thin, smooth, tough, skinlike substance that encloses and separates the different internal organs and to which they are all attached and by which they are supported and kept in place.

The bladder. Its position is shown in the illustration. It is a small, tough sac into which the urine or surplus watery fluid passes and is held until discharged. Were it not for this receptable, there would be almost continuous dropping of urine, instead of being retained and discharged in quantities at long intervals.

The skin of the hog is composed of three layers or parts, the external one being thicker and tougher than in other domestic animals: the second layer is a soft expansion of tissues and protects the termination of blood vessels and nerves of the skin which it covers. This layer determines the color of skin and hair. The third or inner layer contains the blood vessels and nerves.

DISEASES—SYMPTOMS AND TREATMENT.

The author is not a doctor nor the son of a doctor, and does not pretend to use technical terms and phrases, nor educate the physician or veterinary. On the contrary, an attempt is here made to describe in a simple way some of the diseases liable to attack swine, the symptoms attending such diseases, and a few simple remedies.

The diseases to which swine are subject are quite numerous, and many of them serious in their character. The object of this chapter is to give the breeders and farmers some general information that may be of benefit to them; however, in difficult or dangerous cases, if possible, obtain the assistance of a skilled veterinary, or if such can not be reached, ask your family physician to examine and prescribe. If he is level-headed, he will not take offense; if otherwise, you had better change physicians.

In a former chapter we have given the reader illustrations of the skeleton and internal organs of the hog, with a general description of their size and functions. The information there given will not supply the place of a careful and thorough knowledge of anatomy and physiology, but it will make the reader sufficiently acquainted with the hog to treat it with some degree of skill and success. For convenience we will first notice diseases of the brain.

Apoplexy.—This disease is frequently brought on by a lack of exercise and high feeding and is usually fatal. The first symptoms are dullness, disinclination to move, head hangs heavy and low, no appetite, the walk weak and staggering, eyes look wild and roll about, showing much of the white, often red or blood-shot, sometimes temporary blindness, and a general numbness of feeling exists. The feet and legs are cold, hair looks harsh and dry, skin cold. Treatment: Bleed from ear or roof of the mouth; physic with salts or sulphur, and cut off all food except a little skimmed milk.

Inflammation of the Brain, or Blind Staggers.—This is an inflammation of either or both the substances of the brain and the membranes enclosing and separating its lobes. It may be caused by colds, overheating, indigestion, overfeeding, or rich food. Symptoms:

Dullness, redness of eyes, head carried low, the animal refuses to move about much, and lies on its belly: as the inflammation increases, the victim runs wildly about, usually in a circle, and not infrequently carries the head to one side, nose is white, animal seems blind and unconscious, runs against fences, logs and stumps, pulse feeble and rapid, and the breathing short and quick. Treatment: Bathe the head, around the base of the ears and between the eyes, with a liniment of turpentine, ammonia, tincture capsicum, and chloroform, in proportion of 1 oz. each of turpentine, ammonia and capsicum and ¼ oz. of chloroform. Some persons split the skin on its forehead from between the eyes up to base of ears, and rub in salt and pepper; We have known this to work well. Give internally sulphur or salts. Coal oil or turpentine in milk, say ½ teaspoonful of turpentine or a tablespoonful of coal oil in a pint or quart of milk.

Epilepsy or Fits.—Symptoms: Constant grunting, restlessness, rapid breathing, palor about nose, mouth and eyelids, a staggering walk; then the animal falls as if shot and lies motionless for a few moments, followed by convulsions: the face becomes distorted, legs are drawn up and again extended, the eyes stick out and balls roll about, the tongue protudes, jaws become fixed, teeth grind together, foam and froth come from the mouth, the pulse small and wiry at first, then hard and strong, and as the convulsions pass off it becomes weak and irregular; throughout the whole fit the animal is unconscious, and when it revives looks wild, frightened and astonished, and tries to hide itself; after running quite awhile, it comes out cautiously and begins to eat. Treatment: Physic with salts or calomel for temporary relief, but we doubt if any cure can be effected.

Palsy or Paralysis—This may result from an injury to the spine, such as a heavy stroke across the back, or cold causing congestion, or damaged food; if caused by an injury, it is hardly curable; if by cold, or bad food, give a mild physic of salts or sulphur and charcoal, and apply a stimulating liniment along the spine. A change of location to cleaner quarters: more room and purer air is often beneficial. There is not infrequently among hogs a disease known as *kidney worm*, or inflammation of the kidneys, which produces a paralysis of the hind legs. When first taken the animal shows a weakness in the back, a difficulty in getting up, and when on its feet the hind parts swing from side to side, hind feet drag, and in stepping, cross each other, as the disease increases the hind legs become paralyzed and useless; the animal walks on its forefeet and drags its hind parts: the appetite remains good, and the disease seems to be local. A number of remedies are recommended by various persons, such as corn soaked in strong lye, and fed to the animal; a strong solution of soda in milk; a teaspoonful of turpentine given internally in milk and applied freely on the loin as a liniment: coal oil given internally in quantities of a

tablespoonful in a pint of milk, and applied on loin freely; arsenic in one grain doses. Some of the above remedies have effected cures, but the best treatment, after the animal gets down, is to kill it, as but few fully recover after the disease has progressed that far.

Nasal Catarrh, Sniffles, Bull Nose.—This disease is usually confined to pigs; that is, old hogs are rarely attacked by it; although if contracted when young, and not cured, it follows the hog as long as it lives. Symptoms: First, blowing through the nose frequently, especially when they first get out of bed, and it is sometimes accompanied by a cough: eyes often red and watery, hair stands up, pig looks dumpish, and not infrequently the breathing is hard and labored; the sides work like bellows; in such cases the inflammation extends to the lungs and often to the heart, causing thumps. When confined to the nostrils there will be first discharges of lumpy and yellowish mucous, and as the disease progresses, bleeding at the nose, and a choking when eating or drinking ensues; the nose often becomes enlarged, thickened, and turned up or to one side; the roof of the mouth becomes inflamed and tender, so that the victim can not eat corn or hard food. The disease is contagious and will go through a lot of pigs, if kept together. We used to think it incurable, but have changed our mind as the result of experiments. If taken in its incipiency or beginning, and treated as follows, most cases can be cured. Treatment: Prepare an ointment of coal oil, turpentine and ammonia, of equal parts, mixed with sufficient lard to make a tolerably stiff ointment; then catch the pig and rub the ointment on his face and nose, from the tip of his nose to the base of the ears, and on the throat and chest, between the forelegs; apply the remedy two or three times a week for a month; also smear the troughs with pine tar, and feed liberally with milk and ground food, mixed with a little diluted carbolic acid; the acid should be sufficiently diluted to be easily held in the mouth, say a teaspoonful of acid to a pint of water. Pigs that have it so bad as to be unable to eat corn may be greatly relieved, and possibly cured, if fed and treated as above. Be sure to use only finely ground food, and of a highly nourishing character. In other words, the system must be braced up to aid in throwing off the disease. The diseased pigs should be kept to themselves, and the well ones taken to new quarters. The disease may be contracted by the well ones sleeping with the sick, eating from the same trough or feeding place, and it has been known to linger around pens and yards year after year. The pens and yards occupied by the diseased pigs should be thoroughly disinfected by whitewashing pens, fences and troughs with quick-lime water, carbolic acid and coal oil; also sprinkle the grounds with lime, carbolic acid and sulphur, and if possible break it up and cultivate for a year or two.

Strangles or Quinsy.—This is usually an acute inflamation of the throat, and attacks hogs or pigs that are in high flesh. The throat

swells, breathing becomes thick, hard and rapid, hog is feverish, tries to drink, but has difficulty in swallowing and eating. The sick animal moves around a great deal, throws the head about, and, as the disease becomes worse the tongue becomes swollen and protudes from the mouth, attended by coughing; the disease is rapid and often fatal. Treatment: Apply coal oil and turpentine with lard, freely on throat and neck; give turpentine inwardly in milk, and if possible, swab the throat with coal oil or turpentine. The disease is sometimes contagious, yet not very common in this country.

Inflammation of the Lungs—This is usually produced by violent colds, sleeping in manure piles, or other places where foul air or dangerous gases are inhaled. The prominent symptoms are, loss of appetite, incessant and distressing cough, hard and rapid breathing, high fever and heaving of the flanks. Treatment: Apply turpentine and coal oil on throat and chest, and give internaly a physic of sulphur, also a syrup of molasses, hoarhound and mullein in milk

Bronchitis.—This is a disease of the bronchial tubes, or windpipe and the larger air tubes of the lungs. It may be caused by colds, or small worms, or result from whooping-cough (hereafter described), or the extension of nasal catarrh. It is not a common disease among swine, yet occasionally appears. Its presence is detected by a hacking cough and difficult breathing, especially in changeable and cold weather. Treatment: Smear troughs in which slops are fed with pine tar, and bathe throat and lungs with coal oil, or apply the ointment recommended for nasal catarrh.

Colic.—This is not a common or usual disease in swine, but may occur when digestion is impaired by unwholsome food, or cold, wet styes, and lack of exercise. Treatment: Strong, catnip tea, in sweetened milk, will give relief, which should be followed by feeding liberally charcoal with sulphur, or plain charcoal. If charcoal is given two or three times per week, and pigs have exercise, the disease will not appear in the herd.

Diarrhœa—This is not common in old or aged swine, but may occasionally appear from unwholesome food, over feeding, or too rich food. Treatment: Charcoal and sulphur will usually straighten out matters. Scalded milk, with fresh eggs beaten in it, is a good and effective remedy, but if it results from bad food, in addition to the above remedy, a change should be made from the bad to good, sound food.

Spleenitis, or Enlargement of the Spleen.—Hogs when attacked by this trouble are restless and weak, shun their mates, and bury themselves in litter; they have no appetite, but are always thirsty; the breathing is short, they cough, vomit, grind the teeth, and foam at the mouth.; the throat, chest and belly are of a pale, brownish color, and the belly hard and drawn up. Treatment: Hot water, as hot as the hog will bear it, applied on the belly and side, near the spleen and give a

mild physic of salts: bleeding in the ear is recommended by some.

Peritonitis.—Symptoms are in many respects similar to spleenitis and inflammation of the bowels. Hot water, applied with a sponge, or woolen cloths saturated with hot water, to the belly, will give instant relief; in addition, give internally a teaspoonful of turpentine in a pint or quart of milk. The disease works swiftly, and if treatment is not prompt, death follows rapidly. Hot water injections are good, and often effective.

Worms.—Swine are often troubled with worms, and their presence may be inferred when the animal eats voraciously, and yet continues lean and out of condition. The animal coughs, runs restlessly about, uttering squeaks of pain; the dung is hard and high colored; the eyes are sunken, and the animal daily grows weaker. Treatment: Turpentine in milk, is the best remedy. If hogs have access at all times to wood-ashes and salt, they will not be troubled with worms. Coal oil in slops will effectually destroy worms.

Piles.—Hogs have been known to have this disease, but it is rare, and results from long continued costiveness, and is some times brought on by straining during farrowing time. When produced by costiveness, it is usually relieved by removing the cause, and in any case the application of an ointment made of jimpson weed and mutton tallow, applied locally, externally and internally, will usually relieve the animal. Hogs, that live on acorn mast late in the fall and winter, are frequently troubled with piles. The acorn is so astringent as to produce continuous costiveness, and this condition is liable to produce piles.

Lice.—These pests are frequent and common. Coal oil applied on neck, behind the ears, behind the shoulders and back part of the hams,a few times, will destroy them effectually.

Mange or Itch.—This is caused by a small insect that burrows in the outer coating of the skin. Coal oil, vigorously and frequently applied, will cure this disease.

Constipation.—This occurs more often in the winter. It may be relieved with bran mashes with sulphur, pumpkins, apples or roots, salts, given internally, or warm soapsuds given as an injection, and soft soap given the hogs to eat, will often relieve the trouble.

Rheumatism.—Symptoms: Dullness, indisposition to move, lameness, stiff joints, or joints drawn up, and soreness of limbs and muscles. Treatment: Give common soda in milk three or four times a day, say a teaspoonful at a time; continue for a few days. If it should physic too much, give in smaller quantities, or not so often. A liniment of turpentine and tincture of arnica, in the proporlion of 1 part turpentine to 3 of arnica, may also be applied to inflamed or stiff joints.

Rupture.—This is some times congenital, or hereditary, and usually occurs on the belly at the navel. It may be occasioned by an

injury, such as a hook from cattle, getting snagged in running, or improper spaying; or as pigs by being caught by the mother or other large hogs between the animals and side of the pen, thus receiving a violent squeezing, and other causes. Treatment: Starve the pigs for a few days, so as to get the bowels empty; then catch and tie the pig, lay it on its back, push back the intestines with the fingers, then cut through the skin, scarify the orifice in the belly, then draw up the orifice or hole where the intestines have protruded, and take a stitch or two in the skin, and let the animal up; keep it in a warm, comfortable pen and give but little food for a week or ten days, or until the place heals up. The object in scarifying this orifice in the belly, is to make it unite and heal up readily. A common spaying needle and a strong silk thread or cord should be used in sewing up or taking the stitches. Dr. C. A. Robinson has presented in the *Swine Breeders' Journal*, a novel and ingenious truss or bandage, which we think will work well: It is as follows:

"This bandage can be made of stiff canvas or leather. I prefer the former, as it is more pliable and is more easily adjusted to the shape of the pig. The straps can be buckled as tight as necessary, and as the tumor gives way and the opening grows up, as it certainly will, the straps can be tightened. In the middle of the bandage a wooden button should be securely attached, and which should fit over the hole in the abdomen and should be varied in size according to the size of the opening. This button should be covered on the side next the hole, with soft cloth and stitched to the large belt, thus holding it in place. If the rent be very large, you will have to depend upon the canvass entirely. Some trouble may be experienced by the belt slipping back, but this can be overcome by placing a collar around the pig's neck, and to it attach strips of heavy cloth, and then fastened them to the front side of the belt. This keeps the belt in place, and in a short time the animal will be entirely well."

There is still another class of ruptures that are confined to male pigs. It is when the intestines come out into the scrotum or purse of the boar. Such pigs are usually called "bussin" pigs. This class of ruptures may be either congenital, (hereditary), or the result of an injury, and not infrequently it is caused in farrowing, when the youngster is squeezed too hard in his exit from his mother. The rupture may be on one or both sides of the purse. As soon as noticed it should be attended to, and the best way is to catch the pig, tie or hold him on a wide board, which has one end much higher than the other; put the head of the pig downward, then castrate the pig and push back the gut into the body and close the orifice or hole with a stitch or two and the opening cut in the purse with a couple or three stitches, and put the pig in a comfortable pen, keep him quiet, and feed lightly for a week or ten days.

Boils or Abcesses.—These are not uncommon upon the hog, and may, as upon man, appear upon the body or limbs. As soon as discovered, open with a sharp knife, by running the knife in at the bottom side of the lump or enlargement, and cutting up and outwards, so as to slit it open. Wash with strong warm soapsuds or a weak solution of carbolic acid.

Tumors.—Tumors sometimes appear, usually in the udder of sows, and are caused by a failure of the pigs to draw the milk from some one of the teats, or by weaning the pigs too suddenly when the flow of milk is large. The udder becomes gorged and the milk veins or cells inflammed, producing an inward ulcer or hard fibrous tumor that grows rapidly, and unless removed, occasions the death of the sow. We have seen them as large as a quart bowl. They should be removed by a skilled veterinary or physician. We have a few times cured them by taking them when small, and applying to the outside applications of tincture of iodine, which causes them to stop growing, allays the inflammation, and nature absorbs them. Sometimes they appear on other parts of the body, and the same treatment should be given.

Whooping-Cough.—Pigs and hogs are subject to many diseases, and among others some which are contagious. This is one of the latter class. There are many diseases to which the hog is subject that have as an early symptom, a cough, but the whooping-cough is distinct and different from the others, and is almost as plainly marked in pigs as in children. Pigs, when first taking this disease, do not show any very marked outward symptoms or evidences of diseases. The hair appears a little rough, dry and raised, and sometimes a little redness about the eyes is perceptible, indicating slight fever, but there is little if any loss of appetite. When they first get up from sleep or quiet rest, and begin to move about, they will begin to cough, at first slightly, and gradually increasing until they will stop and put the nose to the ground, cough very hard, sides working and belly drawn up, ending often in a very perceptible whoop; after coughing awhile, they apparently spit up something, and move on. We have seen them cough so violently that it would cause them to vomit, and in a few minutes be eating again. It is a cough that breeders usually charge up to dust, but it comes sometimes in wet weather, and if one gets it, it passes along the whole line. It is very contagious, but is not often fatal or even serious, as pigs grow and eat as well as usual. We doubt if it can be cured, but it will run its course and quit. By proper treatment it can be made quite mild and less annoying. Carbolic acid in slops, say ½ teacupful of crude acid to a bucket of slop, or a tablespoonful of crystals to same amount of fluid; also smear the feed and drinking troughs with pine tar, and in very bad cases put pigs in a close house and burn sulphur in there, so as to compel the sick animals to inhale the fumes, and apply to throat and chest the ointment prescribed for nasal catarrh.

Hog Cholera, lung fever, typhoid fever, blue disease, splenic fever, sty fever, spotted fever, swine plague, diptheria, and numerous other names have, from time to time, been adopted or suggested by different persons in different parts of the country and at various times, but, as a rule, they are all one and the same, viz.: A contagious disease that is now and has been for years quite prevalent and fatal and generally known as cholera. This may not be the best name for the disease, but it is the one generally adopted and best known. Whatever name is used to suit the fancy does not in any manner check the disease nor stay its deadly progress. Much money and time has been expended by many learned men, and many Latin names have been brought into use to give microscopic life a name, only to make confusion more certain by apparently giving much information, yet really giving but little. Learned men have been employed by State and National Governments, and after years of, I may say, fruitless toil and expense, they have left the people where they found them, viz.: Scourged by the swine plague worse during the past year than ever before and no relief other than sanitary measures has been suggested or provided. The one trouble that has crippled the work of investigation and palsied the Governmental arm thus stretched out to aid the people is, that every one of the learned gentlemen have so far started out in their investigations with a theory, and their principal object and aim seems to have been not to find out the real nature of the disease but some evidence to support their various theories. The living germ theory is the one upon which most, if not all, have started, and so with magnifying glass in hand they have gone in search of and determined to find some small parasites or worms as the great and insatiable fiend. Of course, starting out with a determination to find parasites and worms, the rivalry has been to see how many new kinds and shapes they could discover with the microscope. If the scourge were not so serious and destruction to property so great, the people might be more patient in reading so many Latin names, and smile at the efforts of each succeeding scientist as he rushed to the front with a new bug, or an old one with a new fangled name. Here are some of the names so furnished: *Bacilli*, *Bacillus Subtilis*, *Bacillus Anthracis*. *Vibrios*, *Bacillus Suis*, *Bacterium terred*, *Spirillum*, *Bacillus amy lobacter*, *Tricocephatus dispar*, *Stephanurus diutatus*, *Strongylus elongatus*, *Schrostoma duentatum*, *Helobacteria*, *Coccobacteria Septica*, *Leptothrix Beggiatoa*, *Spirochæte*, *Sarcin Ventriculi*, *etc.*, *etc.* To the ordinary person or farmer, what value is there in such names. These scientific gentlemen simply mean to tell the public that by the the aid of powerful microscopes they have found in various organs of dead hogs, various shaped and small parasites that are invisible to the naked eye, and that they are the cause of the disease. All, or nearly all of these learned gentlemen admit that the aforesaid parasites are usually found in decaying flesh, and some are even found in the human

mouth. These parasites have not only been found, but the learned gentlemen have tested their vitality and found that iodine, carbolic acid, sulphuric acid, and heat of sufficient strength will kill the spores, but it will also kill the hog. This is valuable information—directing the farmer to kill something that it takes a powerful magnifying glass to discover. How is he to know of their approach? Experience has demonstrated that the strictest sanitary measures will not bar the progress of the disease, nor does filth alone produce it. We have no doubt that the one will impede and the other accelerate the ravages of the disease—"only that and nothing more." We do not wish to be understood as taking the position that science is a humbug, and the microscope a failure—on the contrary, we cheerfully recognize the great benefits mankind have derived from both. We only charge that in this particular disease *both have been overworked.* The microscope will reveal in every drop of water, breath of air and morsel of food, innumerable wriggling, squirming forms of life which are not visible to the naked eye. We here make the point that all these alleged microphytes are not causes, but the results of disease; that they are nature's means of destroying dead tissues, and they have no more agency in causing hog cholera than the man in the moon. Epidemics among swine are not a new thing nor even comparatively so. As early as 1805, we find in the memoirs of the Philadelphia Society an account of an epidemic among swine somewhat similiar in many of its features to the modern disease. It was then, as now, very fatal. In the summer of 1821, M. Sanssol describes a disease among swine in the neighborhood of Maguinet, which spared neither age, sex, nor condition. The symptoms were as follows: "Loss of appetite; thirst; dullness; groaning and seeking of moist places; then followed by hardness of the belly; heat of the skin; constipation; diminution of the urine; difficulty of respiration; heaving of the flanks, and short cough; the eyes were full of tears, and the mucous membrane inflamed. If the disease continued, the succeeding symptoms were still more alarming—the animals began to stagger about; the limbs were stretched out in an unnatural position; rattling in the throat came on; they supported themselves against the wall, and only fell to die a few minutes afterwards. Death usually came in about three days, and was in some cases preceeded by convulsions of the face and extremities." "Post mortem appearances.—The thoracic cavity was filled with bloody, limpid fluid; the lungs much inflamed; the pleura thickened, inflamed and injected; the diaphragm covered with black patches of the size of a shilling; the mucous coat of the intestines slightly inflamed; the windpipe and bronchial tubes full of reddish froth; the brain covered with reddish serosity." Another account of a disease in Averyon and its neighborhood which attacked the respiratory and digestive organs, running its course in from twelve to fifteen hours. "Symptoms.—In the worst cases there is a loss of appetite

small and frequent pulse; haggard eyes; the conjunctiva inflamed; the mouth open, red, and filled with foam; the respiration laborious; plaintive cries; convulsions; palsy of the hind limbs, and involuntary discharge of highly fetid fæces. Death here is the inevitable termination and that in a short time." In 1838, M. Paulet describes a similar disease as attacking swine in the south of France and says it was highly contagious and very fatal. "Symptoms.—Restlessness; cough; loss of appetite; dullness, and a weak, tottering gait. These gradually go on increasing in intensity until the seventh or eighth day, when they become very marked. Then alternations of heat and coldness of the body come on; the ears droop and are cold; the head is heavy; and the tongue becomes discolored; the breath is fetid, and there is a copious discharge of mucous from the nostrils. The skin is tinged with red, but the hue is not very evident excepting under the belly; the animal appears to be in great suffering and cries out pitifully." If the foregoing are not fairly good descriptions of many cases of modern hog cholera, we are much mistaken. Epidemics in swine, and that, too, fatal ones, it will be seen, are not new things. The modern disease first made its appearance at a distillery in Ohio, in 1855, and the first symptoms were violent purging or scours, followed by a collapse and death. It was from these symptoms that it was first named cholera. Since that, however, the first symptoms are somewhat varied. Sometimes in the same herd some hogs will have copious diarrhœa and others will be very costive, so, that while the name may be and doubtless is a misnomer, yet it answers the purpose, as it indicates a contagious and fatal malady. Symptoms of present plague.—The animal appears dull; hair dry and raised up off the body; loss of appetite; extreme thirst; head carried low; seeks dark places and avoids light; gets under bedding; eyes red and watery; nose and lips white and bloodless; breathing rapid; slight hacking cough; chest, belly and throat hot; shivering and trembling of the limbs; lying on belly; when down, shows a dislike to move; other times restless and moving from one place to another; avoids its companions; sides and flanks heave; weakness of hind legs, and, later, fore legs; belly and chest tender, and sometimes becoming hard; chest, throat, belly, and inside of legs reddish or purple color, first showing in spots then in solid mass; the skin wrinkled; blood sometimes coming from nose, mouth and ears; sometimes ears swell and thicken, at other times hang loose and are cold; feet and legs cold; diarrhœa in some cases, and in others, costiveness. These are among the earlier symptoms. Every sick hog does not have all these symptoms, but more or less of them. As the disease progresses, the symptoms become more violent, the surface of the body and limbs become cold; eyes very red; blood oozes from mouth and sometimes ears, and often the animal falls dead while attempting to walk about. At other times they seem to be choking, and occasionally will be found

dead while lying on their belly, or if they can get to water will be found dead in it. In short, death usually comes suddenly and while the animal is in different situations, but nearly always, blood and a watery discharge oozes out of the mouth and nostrils at death. If opened after death, the lungs will frequently be found congested, spotted, and filled with a bloody fluid, or the throat will be found filled with bloody froth, inflamed and ulcerated, or the stomach and intestines covered with dark spots, which seem to be nearly or quite eaten or rotted through. Sometimes the kidneys are enlarged and spotted, and in a few cases the brain congested and spotted. In all cases, some one or more of the vital organs are inflamed, congested, or gorged with bloody fluids, and the organ covered with dark spots varying in size, but the majority of cases examined after death shows the spots on lungs, stomach, or bowels. Hogs that have once had cholera and recovered, will not have it the second time, except, possibly, in very rare instances. If this disease was caused by the minute organisms as claimed by the scientists, why do they refuse to make a second attack? If filth alone generates the disease, why are not animals under like conditions again attacked? Persons who have had asiatic cholera are as liable to second attacks as though they had never went through the ordeal, and yellow fever does not hesitate to make a second attack. Small-pox, measles, and whooping-cough, however, are each exhausted by the first assault upon the human family. Is it not fair, then, to conclude that hog cholera is, in respect to second attacks, akin to measles or small-pox. We think that what is termed hog cholera, is simply *measles*, and will give our reasons for the faith that is in us. First, let us examine the symptoms of measles in the human family as given by eminent medical authority, viz.: "Sneezing, accompanied by a watery discharge and sometimes bleeding from the nose; redness and watering of the eyes; cough of a short, frequent and noisy character, with little or no expectoration; hoarseness of the voice, and occasional vomiting and diarrhœa while the temperature is elevated; the pulse rapid, and headache, thirst and restlessness are usually present to a greater or less degree." If the person takes cold, the measles go inward and attack the vital organs, usually the lungs, sometimes the stomach and bowels, brain or throat, and occasionally the eyes, and is very often fatal where careful nursing is not given. In the army, more men died from measles than any other one disease, and the reason was that it was so difficult to prevent them from taking cold, while at home where persons have comfortable houses and careful nursing, measles is not considered a difficult or dangerous disease. Persons who have measles and get along all right, have the skin, especially the face, neck, breast, under the arm and in groin covered with plain and distinct red spots, varying from the size of a finger nail to that of a quarter of a dollar. These spots are at first a bright red, and in the coarse of a few days they grow pale

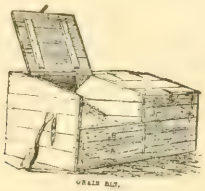
and finally disappear, leaving the skin rough and sometimes causing it to peal off. When a hog worries through the cholera, these red spots can be found upon the throat, breast, belly, and inside of legs, and after they disappear the skin is rough, scaly, and peels off. When a person having the measles takes cold, the measles leave the surface, the limbs become cold, the lips colorless or purple, and violent congestion and pain in lungs, stomach and head attend, and if not relieved death rapidly follows. The internal organs affected are congested, spotted and highly inflamed. So it is with hogs having cholera, and this is especially true when they are allowed to get to cold water or lie upon damp, wet ground. If hogs attacked with cholera are put in comfortable houses and treated as persons are with measles, but a small per cent. of them will be lost. This treatment has been frequently tested and found successful. The object is to prevent their taking cold, and force the disease from the vital organs to the surface. We think the fatality of hog cholera is because of the exposure of the sick animals. Measles among persons is at times much more malignant than at others. So is hog cholera. The practice of continually giving medicine to well hogs is a mistake. It is just as reasonable to stuff medicine continually in well persons. *Give the hogs a rest*, and only give medicine when they are sick. Medicine is a good thing in its place, but it is frequently *overworked*. Again, in contagious diseases most writers say take the sick ones away from the herd. This is a mistake. *Take the well ones away to new quarters* and quarantine the sick on the spot, or at least, if any are left let ti be the sick and try to save the well ones, Disinfect them by sprinkling with a mild solution of carbolic acid, and disinfect the sick quarters often and vigorously. Strict sanitary measures, swift and effectual, coupled with a separation of the well from the sick animals, will impede the progress of the disease, but until some remedy is discovered that will prevent measles in the human family, hog cholera will not be prevented. Don't fool your money away on quack nostrums; they are worthless so far as cholera prevention is concerned.

Abortions.—Sows loseing their pigs is sometimes a troublesome conundrum, and one which the breeder has to occasionally contend with, especially with young sows. There are various causes which tend to produce it, and among others are improper food, such as musty or damaged grain; too much vegetable food; falls; slipping and straining; long and continuous running, either by dogs or young boars, or other sows in heat; rubbing violently against stumps or fences to allay an itching; allowing too many to sleep together in cold weather, when they are apt to "pile up" and lie on each other. The symptoms of approaching abortion are similar to those of healthy farrowing, only more intense, if the third month has passed. There is generally a restlessness, shivering, and other manifestations of extreme pain, and preparations of bed, etc. If the abortion occurs within six weeks after

service, there is usually but little manifestations except an enlargement of the genital organs and a discharge of bloody mucous and strings of flesh. The sow appears to eat as well as usual and appears to suffer but little pain. There is but little that can be done to "stay proceedings," and about the only thing to do is to try and ascertain the cause and separate the aborting sows from their companions. The sick ones usually get along well enough without any medicine, and if allowed to pass several periods of heat can safely be bred again.

Difficulty in Pigging.—Sometimes the sow, and especially very young sows, have a difficulty in farrowing and require help. If they cannot be successfully delivered with the aid of the hand, pig extractors may be sometimes successfully used. Such instruments can be obtained of persons who manufacture and advertise them, or a home-made one can be made of a large wire by fixing a loop, with wire, large enough to slip over the pig's head and yet small enough to pass in easily, and leaving wire long enough to handle and pull. If the labor has been long, say for a day or two, the pigs are most likely dead and can be pulled out with tongs, forceps, or hooks. Sometimes it is necessary to open the side of the sow and remove the pigs to save the life of the sow. In such cases the service of a veterinary or physician should be procured.

A good way to administer medicine to a hog that cannot be induced to eat slop or drink milk, is to take an old boot, cut a hole in the toe, insert the toe part in the mouth and pour medicine in at the top of the leg of the boot.



CASTRATING AND SPAYING.

Pigs kept for porkers, be they scrubs, grades, or culls of thoroughbred stock, will fatten more rapidly and make better pork on less feed if the boars are castrated early and the sows spayed before they have an opportunity of being served. Old sows can be successfully and profitably spayed when they are not longer desirable as breeders.

Open sows in the fattening pen are a nuisance, and their flesh not so good as spayed ones, to say nothing of the higher price the latter bring in the market.

The time for such work is when you are ready. Some people rely upon the signs of the Zodiac, and others, upon the phases of the moon, but the time to act is when your animals to be operated upon are in moderate flesh and when the weather is moderate.

Several years ago, we had Dr. T. C. Miles, of Charleston, Ill., commonly known as Farmer Miles, prepare a short chapter on the subject of castrating and spaying, which the writers firm published in a manual, and which was *with other matter*, taken from the manual by a western writer without a word of credit and inserted in his book. It is proper here to say that Dr. Miles is one of the most skilled veterinary surgeons in the world, and the first man to safely and successfully castrate *ridgling horses*.

Dr. M. says: "As to the time for castrating boars, I would say, do it whenever it is most convenient, and the best way is the way understood by every old farmer unless the hog is ruptured, in which case the striffen around the seed (called the scrotal sack) should be taken out with the seed and the seed string tied within the neck of the scrotal sack with a small twine. When this is done, cut off the seed sack and all behind the tie and let the hog go. I do not like sewing up, as large tumors sometimes result from so doing. Should maggots develop in the gash where a hog has been cut, apply either turpentine or buttermilk."

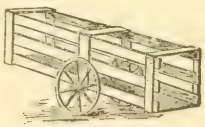
TO CASTRATE A RIDGLING HOG.

In a ridgling hog, the seeds are not in the scrotal sack or in their proper place, but in the body of the animal immediately behind the

kidneys. He should be cut in the side the same as in spaying a sow, but the incision should be of sufficient size to admit the whole hand, when the seeds can be found and easily pulled out.

TO SPAY SOWS.

One man should be in the pen to catch, and two to hold the sow by the feet alone, flat on the ground on her right side and stretched out tightly. The spayer, kneeling at the sow's back, will cut the hair off of the place where the incision is to be made, (a little back of the last rib, and about midway up and down): then cut a gash—if on a hundred-pound shoat, about half an inch deep and three inches long, up and down; slip the flesh back each way about an inch, making a round gash or wide incision, then turn the knife and stick the blade straight in, gently, deep enough to go through the peritonial lining or inside striffen, at the upper corner of the incision. Then put the left fore-finger in and with it and the right fore-finger tear the hole large enough to allow working room for the fingers. Feel inside near the back with the first two fingers of the left hand for the "pride," a little knotty lump which cannot be mistaken, for there are no others like it within reach, but if it is not found, as is sometimes the case, then feel for small guts called the "pig bag," and take them out the best you can until the first "pride" is reached. Take this off and follow back down the pig-bed to a fork, where two guts coming together form a larger one, as two branches running together form a creek; here take up the other branch until the lower "pride" is reached: take it off, put the pig-bed back in good order, and see that it is in the belly proper and not left at the gash. Slack up the hind leg so as to close the gash, and sew up with two stitches, taking hold, but only skin deep, one stitch near the middle of the gash and the other above it. Draw the edges together so as to touch from the middle of the gash upward. Both stitches may be taken before tying either, and then tie the threads or twine crossing each other in the form of a letter X, and when the sow is let go, press the hand over the gash as she starts off. For spaying purposes, the thread or twine used should not be too harsh or too tightly twisted.



MISCELLANEOUS MATTERS

We give in this chapter a few odds and ends that are of value. We have in other chapters given kind of food and when to feed boars, sows and pigs, and will say generally in addition to what has already been said, give your hogs access to good pasture and pure water, and do most of the fattening for pork before the cold weather sets in. Commence in July, while hogs are on clover: feed slop of shorts, and give corn or meal, oats, barley, oil meal, peas, buckwheat and a variety of food; a little sugar in slops is a good appetizer and fattener. When new corn gets out of the milk, cut it up, stalk and all, and feed; a little later, as it hardens, fence off with a portable fence an acre or two of corn and turn the hogs in and let them harvest the corn. At first they will tear down a good deal, but will soon break down no more than they want to eat. When they have cleaned up the first patch, fence off another of like size, and so on until they are ready for market. This plan is called "hogging down." It is labor saving, economical, and leaves the rich manure just where it is needed. Feed charcoal liberally to all fattening hogs, as it promotes digestion and health and economizes food. Pumpkins are good food for a change, and for fattening hogs, so are potatoes, artichokes, sugar beets, bran and shorts, and don't forget to provid *plenty of pure water.*

We here give a table showing comparative value of different kinds of food, comprising: Potatoes, sugar beets, mangel wurtzel, parsnips, carrots, swedes' turnip, white turnip, white clover, red clover, Indian corn, rye meal, linseed cake (English), linseed cake (American), oat meal, barley, peas, beans, buckwheat, and cotton seed meal, presenting the percentage of fat formers in one hundred pounds of each, the percentage of flesh formers in one hundred pounds of each, and the total nutritive percentage in one hundred pounds of each, of the articles of food mentioned. This table will be found of incalculable value to the breeder, feeder, and in fact every one interested in the rearing and feeding of swine, and to those wishing a guide by which they may secure a basis upon which to form estimates, with some degree of certainty, the table will be found equally as profitable.

COMPARATIVE VALUE OF FOOD.

ARTICLES.	Percentage of Fat Formers in 100 lbs.	Percentage of Flesh Formers in 100 lbs.	Total Nutritive Percentage in 100 lbs.
Potatoes	18 9	1.4	20 3
Sugar Beet	13.6	0.9	14.5
Mangel Wurtzel	12 6	1.0	13.6
Parsnips	7.0	1.2	8.2
Carrots	6 6	0.6	7.2
Swedes' Turnip	5 2	1.0	6.2
White Turnip	3 3	0 9	4 2
White Clover	40 0	18 7	58 7
Red Clover	18 7	22.5	41.2
Indian Corn	66 7	11.0	77.7
Rye Meal	55.8	14.3	70.1
Linseed Cake. English	51 0	22.1	73.1
Linseed Cake. American	48 6	23.2	70 8
Oat Meal	51.1	18.0	69.1
Barley	52.0	13.0	65 0
Peas	41 9	23.1	65 0
Beans	39.7	24.0	63.7
Buckwheat	52 1	9.0	61.1
Cotton Seed Meal	33.49	41.25	74 74

RINGS, ROOTING, SNOUTING.

It is natural for piggy to root, and it is healthful besides amusing for the pig. We always let them root, that is, we do not ring or cut the nose. In wet weather or early spring, we sometimes keep hogs off of the sod to prevent too much rooting. However, if the reader desires to ornament swine, it can be done by rings inserted by patent "hog ringers," or by a horse shoe nail run through the hard gristle on end of nose and turned up so as to form a ring, or by cutting it with a knife, leaving the slice at end of nose hang at both ends, or by inserting a sharp, small blade under the skin just above the end of the nose and cutting the large cords or tendons that work the spade on the end of the nose. If rings are used, put them through the partition between the nostrils rather than through the end of the nose. To operate successfully catch the pig in hog trap shown in chapter on Conveniences.

EAR MARKS.

Some breeders mark litters by punching holes in the ears with a small punch, putting them in different ears and different parts of the ears to indicate the litter to which they belong. There are a number of patent ear marks, the best one we have yet seen is manufactured in Chicago and called the Escutcheon Ear Tag, and advertised in the *Swine Breeders' Journal*, the best hog paper in the world.

YOUNG BOARS

Are in the habit of riding, fretting and worrying each other when a number are kept together. The best way to cure this habit is to place an old boar in the pen with them, being careful to take off his tusks to

prevent him from hurting them. The old hog will soon stop all such foolishness.

FIGHTING OR QUARRELSOME HOGS

Can be quieted and prevented from annoying their mates, by inserting rings in their noses. A vicious boar may be subdued in a similar manner.

PREPARING FOR FAIRS.

If the breeder desires to make a "show at fairs," he should begin early, say May or June, and feed up. He should always feed up more than he expects to take, as some may get hurt or not "fill out" as he expects. By an early start, the hogs will shed off the old coat of hair, and the new growth will have come out nicely and present a smooth coat by showing time, and the flesh will be firm and solid. The best feed to start old or young hogs to fattening, is milk, ground oats, corn meal, rye meal, oil meal, and fresh clover, with plenty of pure water. Curry and brush the hogs daily: this makes them thrive better, keeps the skin healthy and soft, makes the animals gentle and improves the coat.

Sows that are to be shown should be bred late enough so as to farrow soon after the close of the showing season. It is the best and most natural way to reduce them. Show hogs should be well fatted, as poor hogs never take premiums and should not, for no man can tell how a poor hog will fill up. Hogs are raised for pork, not work, and in order to determine what proportions and symmetry they are capable of, they must be filled out and show their capacity to carry full flesh without breaking down.

If the coating is very rough, the hog may be clipped. It will help its appearance. The hogs should be taken out into a lot and driven about frequently, singly and in show herds, to accustom them to handling, and being together; this course will save much trouble and some profanity.

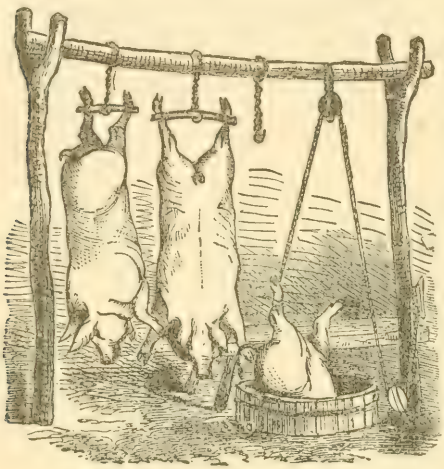
When you get to the fair, do not crowd too many hogs in one pen. Take them out mornings and evenings, and walk them around for exercise. Wash them with a good castile or ivory soap, rub dry, and then oil with a mixture of sweet or castor oil, glycerine, and a little alchohol, if you wash at all. A good, vigorous brushing, twice a day, is about as good as washing, especially if the weather is cool. If, the washing process is commenced, and water freely used, it will be necessary to keep it up, as unless wet or oiled, the hair becomes dry and harsh.

If your animal looks best standing still, keep it still while under inspection; on the contrary, if it shows best moving, manage to keep it moving while being inspected. In short, put your best foot forward, and if the animal has a better end or side view, maneuver it so as to keep its best appearance before the committee. Use the whip gently, and keep animals from becoming excited or angry.

HINTS FOR SLAUGHTERING ON THE FARM.

Slaughtering may be most conveniently done as soon as the weather is cool enough for hogs to "cool out" quickly and meat keep well.

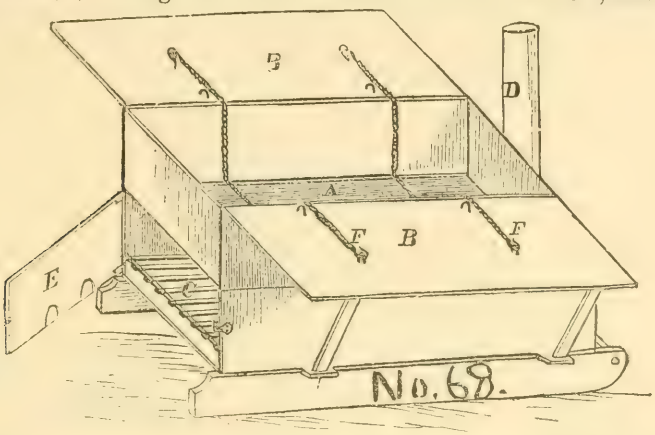
Give hogs no breakfast. Have an abundance of water boiling in kettles to fill a large barrel (molasses, pork, vinegar or coal-oil barrel is best); fix platform on sled, logs, or wooden horses, long enough to hold three or four hogs for scraping; dig small hole by side of platform, into which sink a barrel so that it will stand slanting, and the lowest side of barrel about even with platform; also fix a place to swing animals, after scraping, to clean and gut them. Here is the illustration of an ingenious and convenient method of scalding hogs, which we found in an old number of the *American Agriculturist*, together with the description: "Now as to our method of scalding hogs. We set two posts about 12 feet long, including 2 feet in the ground, and about 12 feet apart, and connect them by a beam on top. Under this beam and near one post, I sink an ordinary half-hogshead in the ground, and place a pulley on the beam directly over it, and another pulley on the side and near the bottom of the adjacent post. A rope is passsed through these and attached to the hog's hind leg, and then he may be easily hauled up and dropped into the tub, then taken out to air and clean; and lastly he may be hoisted up and hooked on to the beam by chains to hang. Such beams may be arranged to hang as many hogs as you may wish to kill. A common barrel kettle kept boiling will keep the water in the scalding tub hot enough, by adding hot and taking out cold, to continue scalding an indefinite time; all with little cost, little fuel, and little lifting. All things considered, this is the best mode we ever saw or used for scalding hogs."



SCALDING HOGS.

"For scalding hogs, even where large numbers are killed, farmers usually employ half-hogshead tubs, and the lifting and tugging which accompanies the operation are well characterized by a correspondent (Wm. Starling, of Peoria Co., Ills.), as 'back-breaking work.' Mr. S. sends a sketch of his hog scalding apparatus, which he describes as very convenient. It is a vat or box (A) of boiler iron, 6 feet long, 3 feet wide, and 2 feet deep. In the bottom of this a frame of slats, 1½

inches thick, is placed. Below the boiler is the fire-place (C) of the same width and depth as the boiler, provided with a grate, a pipe (D), and door (E) having draft holes. B B are lids or shutters, made of



—VAT FOR SCALDING HOGS.

wood and hinged to each side of the vat, and supported in a nearly horizontal position, as shown. F F are chains provided with hooks, held in position by staples. The whole is placed upon a pair of runners to facilitate transportation. In regard to the manner of using the scalding vat, Mr. S. says: 'Close one of the covers until the water is hot, at the same time get a hog ready upon the other cover. Then open the vat; hook one end of each of the chains into staples near the edge of the cover on which the hog lies, and lay the chains over the hog. Then take hold of the chains and roll the hog over, easing him into the vat. The carcass can be turned with the greatest ease, and when sufficiently scalded, placing the hooks on the other ends of the chains into the staples of the cover on the opposite side, by pulling upon the chains the hog may be lifted out. One man can handle the heaviest hog with ease. While one is being cleaned, another may be scalding. If the water is too hot, add cold water; if too cold, close one of the covers a few minutes. To the objection that the cost of such a vat is so much it can not be afforded, I would say that one will accommodate a neighborhood, and can be built by those interested clubbing together, or one might own the vat and others hire the use of it."

Having got all preparations ready and horse and small sled to haul the animals as soon as killed to the place for cleaning, prepare to kill in the easiest, quickest and most humane manner. The best way is to knock the hog down, by using an ordinary sized hammer put on a long handle (say three or three and one-half feet long). Let one man approach near enough to strike the hog a tap just above the eyes and

squarely in the forehead, with sufficient force to knock it senseless; or, knock the hog down by shooting it with a small rifle, loaded lightly, and putting the bullet directly in the center of the forehead. As soon as the hog drops, by either method of downing him, have two men to stick him as shown by the illustration (67) and described below:

MANNER OF KILLING A HOG.

If a hog be well stuck, the blood will almost all flow out, thus leaving the flesh in a much better state than if the animal bleeds poorly. The diagram herewith given, shows clearly, with a few words of explanation, how this should be done. In killing a hog a knife is simply thrust into the throat of the animal, without making a large incision, in order not to expose the flesh to the influence of the hot water and dirt, while the carcass is being dressed. When the knife does not enter in the proper place, the animal will be a long time bleeding, and much of the blood will not flow out at all, but will settle in the shoulders, thus detracting from the value of the pork. Some butchers lay the hog on one side, and make an incision through the skin, one side of the middle of the throat, and thrusting in the knife, work the point back and forth to cut the veins and arteries near the heart. This is a very awkward way, and if the arteries are really severed, the bleeding will be imperfect, as it will also be if the heart is cut. Others place a hog on his back, and thrust in the knife nearly perpendicularly, sometimes severing the windpipe, and mangling the throat barbarously. Swine killed in this manner, are apt to be a long time dying, and never bleed well. *A much better way* is to place the animal on his back, letting a man stand astride of him, and draw his forelegs back as represented in

the illustration. Another lays one hand on his jaw and presses it downward, so as to close his mouth, and keep his head and neck in a line with the body, and with a good "sticking knife," about ten inches long, having a thin blade, the point in the middle, and two edged at least two inches from the point, makes an incision about two inches long just back of the jowls, at the place where the head is cut off (as shown in the engraving) exactly in the middle of the throat. After the incision is made at the place indicated, he sets the point of the knife in the incision, with the edge upward, glances his eye quickly over the animal, to see if his knife stands in a line with his body, so as not to thrust it on one side of the veins, (when it would enter the shoulder) and holds the handle so that the blade will point directly towards the root of the tail. Then with a firm hand he thrusts the knife quickly to the handle, in the direction indicated by the dotted arrows, and withdraws it instantly. If these directions are observed to the letter, the blood will follow the knife, often spurting several feet upwards; and the animal will bleed well and die quickly. A little practice or observation will enable any one to sever the great veins near the heart every time.

Kill enough to run all the hands; then load animals on the sled and haul to place for cleaning. Put the hot water in barrel or vat. The *water ought not to be boiling hot when the pig is scalded.* If it is too hot, the skin will be partially cooked and the hairs stick fast. It is best to try it by dipping an ear, or the nose first. It is usual to add about one-twelfth part of cold water. Scald as soon as the hog has done bleeding and is dead; remove the bristles at once; never let a hog lie after scraping, but put in the gambrel and hang him up. If left to lie, the blood will settle in the flesh and skin where it is subject to pressure. If there are several hogs to kill there should be hands enough to stick and scald some, while others are being scraped and dressed, otherwise much more hot water will be required, or the animals will cool too much. The sooner the insides are taken out the better, for the easier will it be to remove the fat from the entrails. This is readily done, when one gets the knack, with a sharp knife held still while the entrail is drawn across it. When the hog is hung up make a clean straight cut from the vent to the breast bone, cutting through the "Aitch," or pelvis bone, (L. Fig. 2), between the hams, first, and then, passing two fingers of the left hand into the cavity of the abdomen, draw the belly out; hold the knife with the right hand between these fingers, and as it cuts, follow down with the left, drawing out the walls of the abdomen, so as not to cut the entrails. Then splitting the breast bone (M) cut through to the sticking place, and put in a brace to hold the sides apart. In cutting the breast bone be very careful not to let the knife touch the stomach and defile everything with its contents. Now grasp the intestine at the vent and cut it clear; holding the entrails in the left hand,

let their weight aid the right hand in tearing them free from their attachments. At the skirt, or diaphragm, the stomach being removed with them, it will be necessary to use the knife to sever the connection; then, lowering them down, cut off the gullet at the throat and lay them on a table to be cleared from the fat while warm. The liver may now be disengaged, by working it off from its attachments next the kidneys, and then it is removed with the heart and lights (lungs), cutting off the windpipe at the throat. Finally wash out and wash off the carcass with cold water and let it hang to cool. Clean the intestines while they are still warm. When the carcass is perfectly cold, it is ready for shipping or cutting up, and may be kept for many days in cold weather. When a hog is to be cut up, first lay it upon its back; cut off the head as shown in Fig. 1; then split the carcass, cutting straight through the backbone, from the tail to the neck, with a knife and cleaver. It is best to saw the bone sometimes, especially if frozen. The leaf fat and kidney fat with the kidneys (K) are now taken out, using the knife only to loosen them from the skirt (P) and tearing them off towards the hams. Then take off the hams. Cut from the tail, and saw the small "Aitch" bone at the loin; then cut rounding to the flank, so that they will need but little trimming. Next take off the shoulders, cutting straight across the side, as shown in Fig. 1. Trim off the

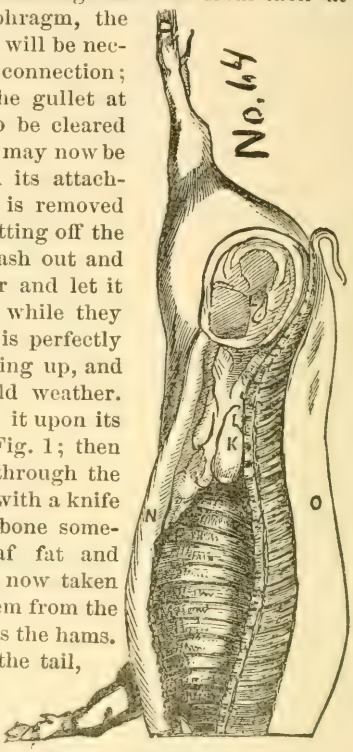


Fig. 2.—INSIDE OF CARCASS.

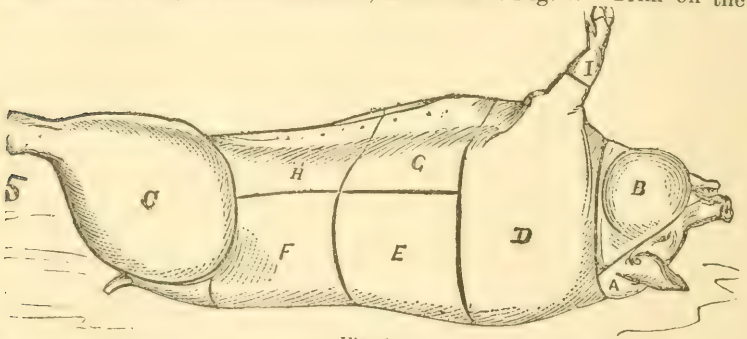


Fig. 1.

spare rib from the shoulder, cutting close to the ribs on the side, and

straight to the end of the spines; this leaves a good portion of lean on the ribs. Loosen the tenderloin at the rear and tear it out. Then cut off the flank (H) [see illustration on opposite page] and brisket (G) in one piece, and cut in two if desirable. The thick back fat (O) Fig. 2, is now cut off from the rib-piece (E) and loin (F) Fig. 1, is left in one piece, or cut as needed for use fresh, or cut into two or more pieces at once. The cheeks (B) are removed the pate (A) by a cut passing from the mouth close under the eye, and the jaw is cracked in the middle. Thus the cheeks are held together and are conveniently hung up. They are cured like hams and shoulders. Head cheese is made of the pate and trimmings. The feet (I I) are cut off at the hocks and knees as shown in Fig. 1, and soused.

We give below another method of cleaning, taken from the Albany *Cultivator*, of date 1839: "After the hogs are laid on the platform, first dust them over with finely powdered resin from a dredging-box; then cover with a coarse blanket and sprinkle thoroughly with hot water, enough to wet them thoroughly; let blankets remain a few moments; then remove the blankets, when the hair will come off easily, and the hog can be cleaned as well as by scalding in vat, barrel or tub."

CURING.

We here give some methods employed by various persons for curing pork and hams. We make no pretentions to knowledge on this subject and can not make any recommedations. We have gathered them from *American Farmer*, *Ploughboy* Albany *Cultivator*, and other papers:

"As soon as the pork becomes cool, I cut and sort it, taking great care to have the tubs perfectly sweet and clean. In cutting, I take out all the spare ribs, and make pickled pork of all the side between the ham and shoulders, cutting it into pieces of suitable size for family use. I trim the hams and shoulders well. I cover the bottom of the tub with rock salt, and then put in a layer of pork, nicely packed, then cover this layer with salt, and so on, until the tub is filled. I use rock salt and very bountifully' In six or eight days, make a pickle of salt and cold water, as strong as possible, and cover the pork previously salted with it. It will then keep for use for many years if you choose. In preparing the hams and shoulders, I weigh several, to come at the probable weight of the whole. They are packed with great care, in suitable tubs. My process is to sprinkle some coarse salt at the bottom; then pack in the hams and shoulders firmly, side by side, being careful not to pack the back of one flat on the top of another. The spaces are filled up with chines, hocks and jowls. To about every 300 weight of meat, I take 30 pounds of rock salt, one pound of salt petre, and fourteen pounds of brown sugar, or half a gallon of good molasses, (generally the latter). Take as much pure water as will cover the meat, put in a clean vessel, add the above articles, boil it, removing the scum as it rises, and when no more rises set it to cool, after which, pour it on

the meat until it is covered three or four inches. If the hams are small, weighing from 12 to 15 pounds, let them remain in the pickle five weeks; if from 15 to 25, six weeks; if from 25 to 45, seven weeks. When you remove them for the purpose of smoking, put them in clean cold water for two or three hours. If there is too much salt or salt petre adhering to the surface of the hams, the water will take it off. The smoke should be made of clean green hickory. A fire should be built only in dry weather. And when the meat has acquired a yellow tinge, not red or black, they are removed and hung up in a dark place where they are not disturbed by flies or vermin."

"I turn my barrel over a pan or kettle, in which I burn hard wood, (commonly hickory or maple,) for seven or nine days, keeping a little water on the head of the barrel, to prevent it from drying. I then pack two hundred weight of ham in my barrel, and prepare a pickle, by putting six gallons of water into a boiler, with twelve pounds of salt, twelve ounces of salt petre, and two quarts of good molasses; this I stir sufficient to dissolve the salt, etc., and let it boil, and skim it. I then let it cool, and pour it on my ham, and in one week I have smoked ham, very tender, of an excellent flavor, and well smoked. When the weather becomes some warm, there will be a scum rise on the pickle; by keeping my ham under the pickle, it will keep the year round. It is better to have a good white oak barrel than any other. Try it, and if you ever have had meat smoked earlier after killing, and more palatable, please inform the public."

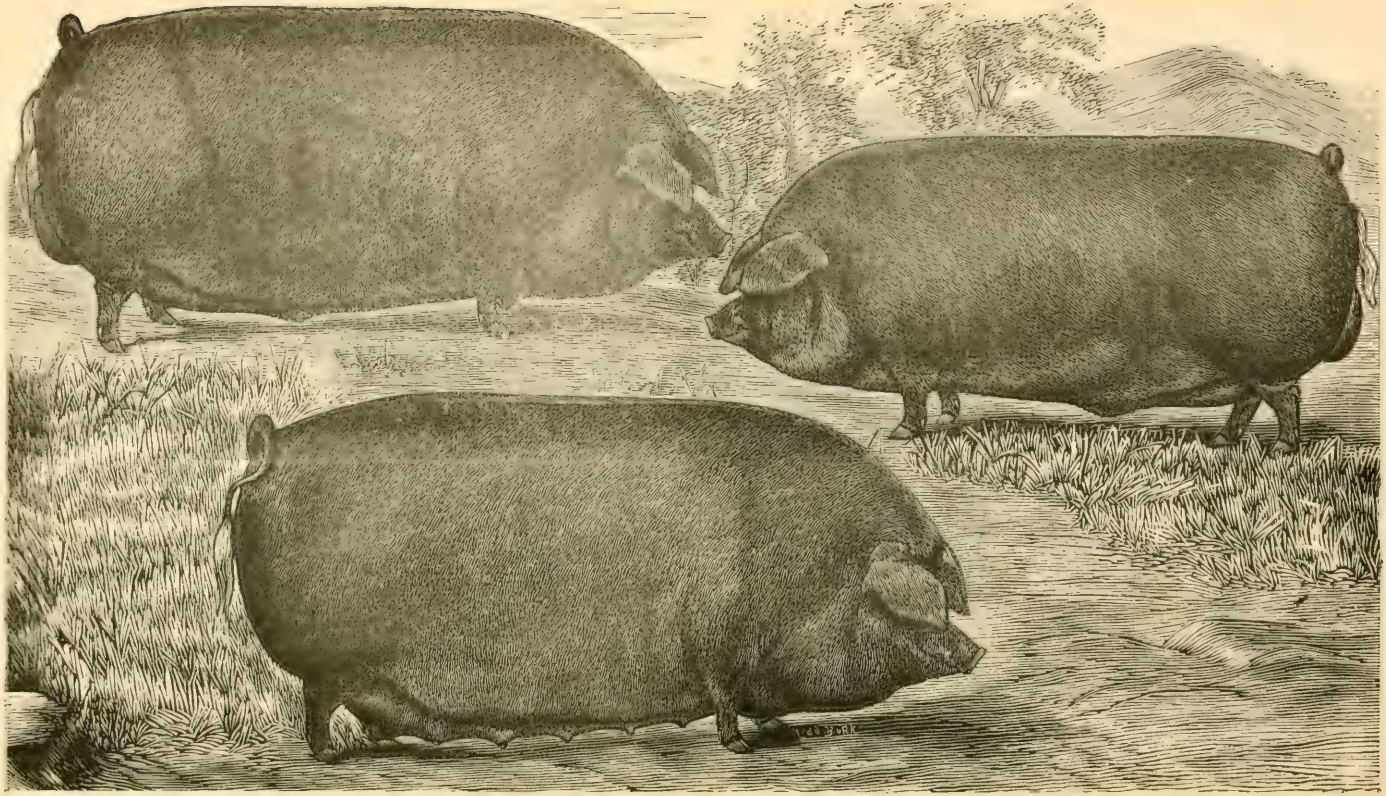
"Virginia way of curing pork and hams: To every one thousand pounds of meat, put three pecks of salt of the best kind, mixed with one pound of pulverized salt petre; rub the salt well on the meat, and put down the hams and shoulders first, then the side pieces, etc. On the fifth day, take it up and rub it again with salt, with powdered red pepper to each piece; then put it down as before; the removing it makes it take salt evener. If any bloody brine appears remove it. In two weeks repack the middlings and small pieces, putting those salted least lowest down. In three weeks, wash your shoulders and put them in the smoke house; in four weeks put the hams in. The fire should be placed in a safe position, so that if a piece of meat falls, it may not fall in the fire and thus burn the smoke house. The meat should hang clear from the wall. After the meat is smoked, put out the fire and paste up all the crevices, and with a good lock on your door, your hams, shoulders, etc., will keep free from flies, and be fine all summer; no varnishing or sewing up is at all necessary. To judge corn-fed pork from still-fed or acorn-fed, examine the leaf; it should be hard and have a cracked appearance like tallow; when it appears *oily*, do not touch it."

"I rub fine salt, with molasses and salt petre on hams, and pack them

as close as I can in a cask. After a day or two, add pickle. In a cellar where it does not freeze, thirty days is long enough for hams not over 20 pounds to lay in pickle. I use iron hooks, made of wire ¼ of an inch thick, one end sharpened and turned short to hook into the ham; the other end turned wide, to hook over a pole of two or three inches diameter, and the hooks are six or seven inches long after they are made. I hang up the hams a few days to dry, and then smoke them. Immediately after smoking, I hang them in the larder or store-room, and slip over each ham a bag made for the purpose, of stout and close cotton or linen, and with a string tie it as tight as possible around the hook, and above the ham, so that a fly can not enter or deposit her eggs on the ham, and the hams remain perfectly free from worm through the summer, or any length of time, as fine as when bagged. The hooks are cheaper than strings, as they last an age, and the bags, if kept for this purpose, will serve for many years, if kept perfectly free from holes. If hams are not bagged till March or April, the flies may have deposited eggs on them, and they should be examined weekly to learn whether insects are on them, to be removed. I object to the advice of packing hocks and jowls with the hams, to save pickle, as it will not allow room for enough pickle to save the hams. Many years ago I packed pieces of pork among the hams, to make it compact, and after the hams were smoked, found they had not taken sufficient salt, and were tainted so early as the month of March. If hams are packed closely, in a cask of much size, there will not be too much room for pickle enough to save them. I use pickle saturated with salt in all cases. When it is not convenient to use casks, hams will cure equally well by mixing so much molasses (or sugar) with fine salt, and rubbing them together till like pretty dry sugar. Lay the hams, skin down, on a wide board, one end drooping. Rub on the flesh parts, the salt and salt petre thus prepared. After a day or two, the molasses will cause the salt to dissolve and run off; set a vessel under the lower end of the board to receive the pickle, which you can baste on the hams, after adding more salt to the hams, as it melts and runs off. Thirty days is long enough, when pickled as above. I have used an ounce of salt petre, and a half ounce to each ham of 16 or 20 pounds, and found no difference in the hams when used. I think pork better without salt petre. It may be packed, skin down, each layer covered with coarse salt, which is preferable to fine salt, except for rubbing on each piece of the pork before packing. After the cask is full, cold water filled to cover the pork, provided salt is put on, so as not to diminish that used in packing the pork; or pickle may be boiled, with some sugar or molasses, if sweet is preferred. Put some pearlash or saleratus in while boiling, as it causes the scum to rise, and clear the pickle, and the scum must be skimmed off. If mice are in the room, they can crawl up the wall, over the ceiling, and descend to the ham. To prevent them from lodging on the ham, take a

smooth and stiff piece of paper, make a hole in the center of the size of the wire, and slip it on the hook from which the ham is suspended, to form a cap above the bag. When the mouse passes down on the hook to the ham, he will slide off the paper to the floor, and must commence a new journey on the wall."

"The intrinsic value of salted meats, whether for family use or for market, depends materially upon the manner in which they are preserved. An excess of salt renders lean meats, as beef and ham, hard, tough and unpalatable, besides destroying much of their nutritious qualities; while too little salt, or an equivalent of some other antiseptic, will not preserve them in a healthful state. It is as easy and as cheap to preserve meats well, as it is to do it badly, if we are furnished with good rules, and duly observe them. There are, no doubt, many rules adapted to this end. We have tried many, and have finally, for some years, adopted, with perfect satisfaction, for family use, the pickle which we give below, for the curing of beef and hams. It is said to be equally good for pork, though we have not used it for this purpose, as we lay down none but the fat part of the hog, which is not injured by an excess of salt. This has been denominated the *Knickerbocker Pickle* and is made as follows: Take six gallons of water, nine pounds salt, three pounds coarse brown sugar, one quart of molasses, three ounces salt petre and one ounce pearlash. Mix, and boil the whole well, taking care to skim off all the impurities which rise to the surface. This constitutes the pickle. When the meat is cut, it should be slightly rubbed with fine salt, and suffered to lay a day or two that the salt may extract the blood; it may then be packed tight in the cask, and the pickle, having become cold, may be turned upon and should cover the meat. A follower, to fit the inside of the cask, should then be laid on, and a weight put on it, in order to keep the meat at all times covered with pickle. The sugar may be omitted without material detriment. In the spring the pickle must be turned off, boiled with some additional salt and molasses, skimmed, and when cold, returned to the cask. For domestic use, beef and pork hams should not be salted the day the animals are killed, but kept until its fibre has become short and tender, as these changes do not take place after it has been acted upon by the salt. Meat that is to be dried and smoked, requires less salt than that which is to remain in pickle, on account of the preserving qualities of pyroligneic acid, which is supplied by the smoke of the wood. The great art in smoking meat well, seems to consist in having the meat dried by smoke, and not by heat. The hams of Westphalia and the smoked beef of Hamburg, which are unrivalled in reputation, are managed in this way. The Westphalian farmers have a closet in the garret, joining the chimney, made tight, to retain smoke, in which they hang their hams and bacon to dry, out of the effect of the heat of the fire. Two apertures are made from the closet into the chimney, and a place is



made for an iron stopper to be thrust into the funnel of the chimney to force the smoke through the lower hole into the closet. The upper hole must not be too big, because the closet must be always full of smoke, and that from wood fires. The Hamburg method of making their superior smoked beef is this: Fires of oak chips are built in the cellars, from whence the smoke is conveyed by two chimneys into the fourth story, and thrown into a chamber by two openings placed opposite each other. The size of the chamber is proportioned to the quantity of meat to be smoked, but the ceiling is not raised more than five and a half feet from the floor. Above this chamber there is another, made with boards, into which the smoke passes through a hole in the ceiling of the first, whence it escapes by openings formed in the sides. The pieces of meat are hung up at a distance of a foot and a half from each other, and a fire is kept up night and day for a month or six weeks, according to the size of the pieces."

"Put each ham with two teaspoonfuls of salt petre, and let them remain for eight or ten hours; then mix brown sugar with fine salt till the salt is brown, and then rub each ham well with this mixture, and pack them down in a tight cask, sprinkling salt very lightly over every layer; let them remain for twelve or fourteen days, and then unpack them, put those that were on top at bottom, and add any pickle which they made pour over them; in two weeks more they will be fit to smoke."

"For ten hams: One pound of salt petre, two pounds of brown sugar, three and one-half pounds of salt; mix all these together, and rub each ham well with it: then pack them down in a tight cask, and let them so remain for three weeks. Then make as much strong pickle as will cover the hams, to which add three gallons of ley; boil and skim this pickle, and when it is cool, pour it over the hams, and let them remain in this pickle for three weeks more, then drain them and smoke them with green hickory."

"For twenty-four hams: Six pounds of fine salt, three pounds of brown sugar, or three pints of molasses, one pound salt petre; mix all these ingredients together, and rub each ham well with them. Pack them down in a tight cask, and let them lay five or six days, then take them out, turn them, pack them down again, and sprinkle them lightly with salt, letting them remain five or six days more; make a pickle strong enough to bear an egg, cover them with it; let them remain a month, when they will be fit to smoke."

"My practice is as follows: First salt the pork by giving it a pretty good salting, and pack it away on barrels or planks, with a slope sufficient to let the brine run off. In this situation it lies ten or twelve days, when it is taken up, and each piece wiped dry, with a coarse

cloth, and to each ham is added a heaping teaspoonful of the best chrystalized salt petre, by sprinkling over it, and rubbing it well in with the hand. It is then resalted well again, and packed away on planks or boards laid horizontally, or in tight casks if you have them convenient, as it may then be an advantage to retain and preserve all the brine you can; whereas, the first brine I have found from experience to be of great injury as it tends to putresence and should by no means be reabsorbed by the meat laying in it after being extracted by the salt, as I conceive it to be that which produces the bugs and skippers in the meat after the meat has been smoked. The time of putting on the salt petre is of much more importance than is supposed by those who have not made the trial, for if put on at the first salting the meat is always dry, hard, and too salty, but why it has this effect I am not chemist enough to determine On giving the meat a second salting I add to the salt as much brown sugar or molasses as will moisten or dampen it, and as much of the common red pepper as will give the salt quite a red appearance. The pods are first dried before a fire on a griddle, and then pounded tolerably fine in a mortar. The meat then lies about five or six weeks, when each piece should be rubbed well with hickory ashes, and hung up to smoke with the hock downwards, which prevents its dripping and retains its juices. The Liverpool sack-salt is what I have generally used, and I think it is much to be preferred to any other. The smoke is generally made from chips raked up from the wood-pile, with a little of the dust, doated, or rotten wood with it, to prevent a blaze or clear fire, and too great a heat; sawdust of hickory or oak is still better to make the smoke, to which is added two or three of the pods of red pepper each day."

"To twelve hams of common size, take 8 pounds of brown sugar, 1½ pounds of well chrystalized salt petre, and 5 pounds of fine salt. Rub the hams with this mixture, and let them be one week in a cask with the skins downward; then make a pickle of the strongest coarse salt, of sufficient strength to bear an egg; add about two or three quarts of ley from hickory ashes, refined by boiling and skimming; when cold, cover the hams with it, and keep them down by a weight; let them lie three or four weeks, according to their size; then hang them up in the smoke house; after twenty-four hours commence smoking them with sound hickory wood, and repeat this every morning until sufficiently smoked. There is some difference in the subsequent practice of the best managers. Those prepared by the dealer first mentioned, have been wrapped in the finest, dryest and sweetest clover hay, and then tightly sewed up in strong canvas bags; they are then kept hanging up in the smoke house or packed for shipping; this mode is not always successful in preserving them from the fly. Burying them in very dry hickory ashes, and packing them in boxes kept in the smoke house, and occasionally changed, and dried through the summer, has been found,

in my practice, the most effectual mode of preserving them. When wanted for use they should be put in water the preceding evening, to dissolve the ashes adhering to them. If dipped in ashes when first taken from the pickle, it forms a coat which is useful in preserving them from the fly."

"Rub them with salt, lay them down as compactly as possible, and sprinkle each layer with some salt; then prepare brine sufficiently saturated with salt to bear an egg, or a potato; to this add 2 quarts of molasses and about 8 ounces of salt petre for a sufficiency of brine to cover a barrel of hams; pour on this mixture, when cold, and when the hams have laid in it about a month, take them out and smoke them. The quicker and more thoroughly they are smoked the better. Then lay them away in a cask, filling up all the cavities with dry ashes, which may be either leached or otherwise, and cover them over with this ingredient. In place of ashes bran may be used. In this way the ham will be found equal in flavor to that of the Westphalia, and may be kept perfectly sweet for almost any length of time. Where beef or other meat is to be cured let the process be the same, if the meat is to be smoked. If it is to lie in the brine, it should be drawn off after it becomes tinged with the blood of the meat, and boiled till the scum has all risen to the top, which must all be taken off, and when the brine has cooled, apply it again to the meat. Hams and beef in particular, when preserved in this way, are worth 20 per cent. more than when cured in the usual way of salting."

"A writer in the *American Farmer* says he has frequently tried every way which has been recommended by its correspondents, to preserve hams, etc., free from bugs, worms and rancidity. With him, not one of them succeeded well. The greatest difficulty in a warm climate, is to preserve them free from rancidity. After being so unsuccessful in experiments, which might perhaps succeed well in colder climates, he resolved to pack his hams in charcoal, knowing its antiseptic qualities. This had succeeded to his perfect satisfaction, and he shall not hereafter try any further experiments in this matter. It is of great importance to have the hams, etc., dried as early as possible, that they may be put away before the season arrives for the bug or fly to attack them. If this is effected in due time, and they are well packed in charcoal, made fine, he feels assured that the lovers of good hams will have no reason to regret having made the experiment. The difficulty of getting the charcoal off, may be made an objection by the neat housewife, but this is not much greater than to get the ashes off when bacon is packed in ashes, as is the practice with many."

LARGE HOGS IN EARLY TIMES.

In 1818 there is an account of a hog weighing 1,500 pounds. Breed not given.

In 1820 two hogs were exhibited in Baltimore, weighing 1,743 pounds.

They were raised in Lancaster County, Pa. One measured in girth 6 feet and 3 inches, and from tail to end of nose, 8 feet and 1 inch. One was 18 and the other 14 months old. Breed not given.

In 1821 a hog of the Grass breed, 2 years and 8 months old, was exhibited at Albany, N. Y., which weighed 1,133 pounds, and measured 10 feet from end of nose to tip of tail.

In 1822 a hog of Grass breed, 3 years old, raised in Massachusetts, and weighed 1,068 pounds; sold for $200.

Same year, 4 pigs, 4 months old, of Grass and China breed, weighed 348, 318, 310 and 308 pounds; raised in Massachusetts.

In 1823 a hog raised near Troy, N. Y.; weighed 1,465 pounds.

In 1827 Mr. G. Long, of Butler County, Ohio, raised a hog, which weighed 1,260 pounds. It was exhibited at Cincinnati and down the river; the person exhibiting it realized $900 that season, and refused $2,500 for it. Breed not given.

In 1831 Samuel Dare, of Salem, N. Y., killed a hog that weighed alive 1,074 pounds, and dressed 945 pounds.

In same year 115 hogs were shipped from Whitehall to Montreal, and among them was one hog of the Grass breed, was 5 years old, weighed 1,148 pounds, was 6½ feet long, and measured in girth 6 feet and 10 inches. Another of same lot was of Byfield breed, 2½ years old, weighed 1,040 pounds; length 6½ feet, girth 6 feet and 7 inches.

In 1832 A. McMahon, of Union County, Ind., had a large white hog from stock imported from England, which weighed 1,160 pounds

In same year John Saterwaite, of Warren County, Ohio, raised a hog which at 3 years and 2 months old weighed 1,400 pounds.

In 1854 A. C. Moore, of Butler County, Ohio, sent weights of 32 hogs of his raising, from the premium boar at Dayton fair, a cross of Byfield, Grazier and Poland. At 21 months, average 466 pounds; 20 best, average 500 pounds. The Rossville *Standard* says of these hogs, that they were the fattest and smallest boned hogs ever brought to that town.

In 1855 some hogs in Iowa, called Liverpool Whites, weighed 1,200 pounds.

In 1859 in New Jersey, the following large averages were reported: 31, average 532 pounds; 30, 537½; 28, 527; and one hog weighed 1,045 pounds.

In 1860 in New Jersey, a hog is reported as weighing 1,393 pounds; it was of the Suffolk breed.

In 1863, one in New York, 1,360 pounds; in 1864, in New York, 1,355 pounds; breed not given.

SHIPPING CRATES OR BOXES.

Shipping breeding pigs and hogs by rail, and usually by express, requires a box or crate for each pig shipped. The breeder desires to have the crate as light, yet stout as possible. Some time in the early part of 1886, the *Swine Breeders' Journal*, published at Indianapolis, Indiana, offered prizes for the best shipping crate. A number of persons competed, and among others, two patent crates were entered. By permission of the *Journal*, we insert the illustratlons and descriptions of the several crates.

Sharpe's folding return crate for hogs, pigs, sheep, calves and fowls, received the premium offered by the *Journal* for the best patent shipping crate. It is described as follows: Size of crate—bottom, 2 ft. 7 in. entire length and ⅞ in. thick; width, 15¼ in.; height for front end board, 22 in., and 14 in. wide; size of crate in clear, 3 ft. 6 in. long by 14 in. wide and 22 in. in height. Four slats, 2½ in. by 3 ft. 10¼ in. long and ⅝ in. thick; two slats, 2½ in. by 4 ft. 8¼ in. long and ⅝ in. thick, to form the handles at each end; two slats, 3 in. wide by 3 ft. 10¼ in. long and ⅝ in. thick, to be nailed on top edge of the bottom; six of the slats have the ¼ in. hole 1 in. from one end and ⅜ in. hole 2 in. from the other end and exactly 3 ft. 7¼ in. from center of holes; the two slats, 4 ft. 8¼ in. long, have the holes 5 in. from the ends, or exactly 3 ft. 7¼ in. from center of holes, with ¼ in. holes at one end and ⅜ in. hole at the other and being the second slat from the top and forming handles at each end, to carry by and to raise up the back end to use the wheels. The back standards are 2½ in. by 1 in. and 22 in. high, and correspond to the length of the front end board. The door standards are 2 in. wide by 1 in. thick and 22 in high, with slats across to correspond with the three lower slats on the sides, with the bottom slat to come out flush with the outside of side slats, while the other two slats are only 14 in. long; with two bolts, ⅜ by 3 in. at top, that retain the top slats at back end and forms the hinge for door, with the two flat bolts, ⅜ by 3 in., one on each outside of door, on bottom slats, to receive the lower end of braces with washers and burrs. The braces are ½ in. by 1¼ in. wide, 21 in. long, and 18¾ in. from the center of

holes and should be of hard wood. Four pieces, 15¼ in. long, and 6 in. wide and ½ in. thick, properly spaced to cover the top, using ½ lb. 6-penny finishing nails for each crate. Two cast wheels, 3 in. in diameter and ½ in tread, with ½ in. hole in center for 2½ in. by 3 in. lag bolts, with a cleat on the under side of bottom under the wheels, 1 in. by 2 in., nailed at each end; also a cleat, 1 by 1½ in., at back end to support the board. The eight lag bolts, ¼ by 2½ in. long, go through the slats into the front end board, with square heads and washers. The six bolts, ⅜ by 2 in., are for the slats at back end, through the back standards. The two bolts, ⅜ by 1¾ in. long, are for the upper end of the braces, through the second slats from the top—6⅜ in. to center of bolt holes through the slats into the standards up and down. The circular piece at left end, between the bottom and second slats, shows the feed and water trough, which is firmly nailed to the end board, even or flush with the bottom and having a separate bottom from the main bot-

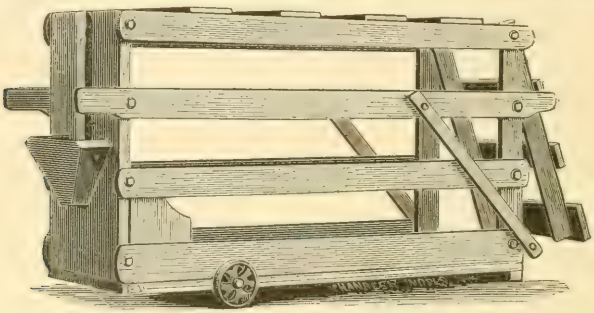


Fig. 1.—Sharpe's Folding Crate.

tom, with a front board, making a water-tight trough, with holes on each side, for spout of water can, when in transit. Also showing the feed-hopper at the left or front end and having a slide running from the bottom of hopper to the top end, which, by letting down a hole, lets the corn into the trough, and by raising again, closes the opening and shuts off the feed or corn; to be operated by the person in charge while in transit; the feed furnished by the shipper, and deposited in the hopper. The door is shown partly open, but when wanting to use the crate, the door should be swung up over the top, the crate set up to the open door or gate of the pig pen or lot, and when the pig or other animal is in the crate, place an old broom handle or stick of any kind through between the slats, back of the animal, to prevents its backing out while the crate is taken forward to let down the door and fasten it. We should, if shipping in cool or cold weather, line the inside of crate on sides and top with an old gunny or coffee sack, which could be very easily done by taking out the side tag bolts in front end of the top slats and the burrs off on the back end. Then lift the top off and turn the

bottom side up and tack the sack to the sides, letting the sides come down nearly to the bottom and across the top and back from the front end, say 4 or 5 in., to let in light and air. In using the crate, bed the bottom well with chaff, short straw, or what is better, saw dust, to absorb the droppings. The idea of a slat or open bottom for drainage, will never do in a shipping crate, as the express companies would kick hard, besides getting the car floor badly besmeared and everyone else that handles the crate. The crate from which the photographs were

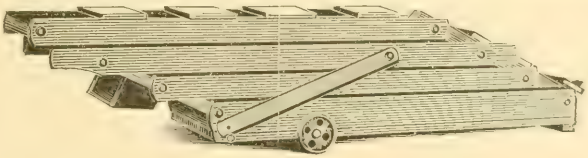


Fig. 2.

taken, is made of common, cheap pine lumber, except the braces, which are oak, weighs about 40 pounds and is about the size for a pig six to eight months old. Figure 1 shows the crate with the door but partly thrown open; Fig. 2 shows the crate folded for return, with the braces swung over and fastened by a screw at lower left-hand corner, thus taking less than half the space as saown in Fig. 1.

The Sharpe crate is protected by patent. It is a very good crate, convenient and light, but we do not think much of the idea of having crates returned, for two reasons— it is a great deal of trouble to seller and buyer, and the other and stronger one is, too much danger of disease being returned with crates. We give below a number of crates and mode of making same, which are not patented.

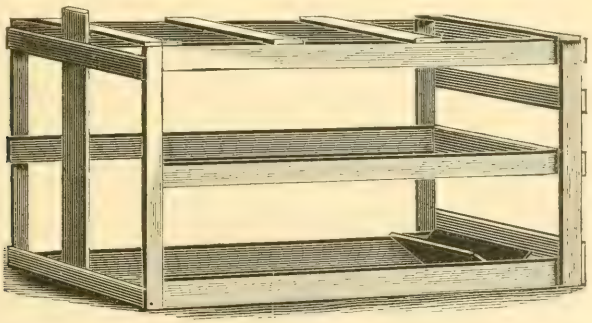


Fig. 3.

The Clements shipping crate, represented by Fig. 3, is quite simple, and is constructed as follows: Cut your uprights of required heighth of the same material as the side slats, $\frac{1}{2}$ by $3\frac{1}{2}$ inches; lay your upright pieces on the bench and use 6-penny clinch nails. Nail through

the side slats and on down through upright. Nail all the side slats on before you take it up; then lay it on some heavy piece of iron and clinch the nails. This, when done, will look like a small gate. Now make as many of these sides as you want, set them up on the floor, nail your end pieces through into upright with 10-penny finish or wire nails, and be sure you have your uprights on the outside. Nail bottom cross-ways to bottom slat. Make a small trough, water-tight, and fasten it securely. Nail cross pieces on top the crate. Fasten the end pig goes in at thus (see Fig. 3) · Drive in your pig, slide down the single slat, nail it or fasten with screw, and let him go.

The McKelvie shipping crate received the premium offered by the *Journal* as the best general purpose crate presented. It is shown in Fig. 4, and is described by Mr. McKelvie as follows: "In the first place I take measure of pig so as to have no guess work, and make a crate to fit him, hot ioo tight or too loose, for each I consider a detriment to his safe arrival at destination. To illustrate: I will say I have a pig to

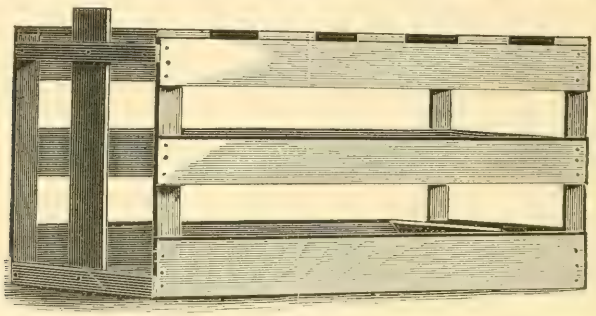


Fig. 4

crate that measures ten inches in width, thirty-six inches in length and twenty-four inches in height, then I will make my crate twelve inches wide (inside), forty inches long and twenty-seven inches high. I then in this case would saw my end or corner pieces first, four of them, 1x4, 27 in. long. I then would saw the bottom board in this crate 40 inches long. 12 in. wide and 1 in. thick, and bore some holes ($\frac{3}{4}$ or 1 in.) to let water out under the pig. The sides I make out of $\frac{1}{2}$ in. lumber, often using boot boxes, as can then get boards to saw in width to suit length, same as bottom board. The bottom board I have eight inches wide, the other two side boards in this crate should be six inches wide. I then nail the bottom side board on, letting it come one inch below the ends of the corner pieces; now nail on the other two side boards, $3\frac{1}{2}$ inches space between. and we have one side made. These sides I make with wrought iron nails, as they go through the 1x4 in. corners and clinch, either 6's or 8's, and makes a stronger and lighrer job, than if you had your corners out of 2x4 in., which is often used. I make the other side

same as first, and then set them up edgeways and put my bottom board between them. Remember I let my bottom side board come one inch below the end piece; this is for the bottom board to rest on the corner piece, so you can nail through the bottom side board into the edge of bottom board; this makes a strong bottom. Now I put on the front end. The bottom board of front end is eight inches wide, and boards above spaced same as side, but all of front one inch lumber, for fear of a break. This front end is for pigs going a short distance, but if I ship so far that it will be necessary to feed, I then make a self-feeder in the front end by making it solid and double all across and a partition up and down. Make this front end out of ½ in. wainscoating, with space between where it is double, 2 inches. Two holes at top, one for feed, and one for water. A trough at bottom, 4 in. wide, is made by nailing a piece of 1x4 in. back of the corner pieces and to them. For the top I use 1x4 in. lumber, making the spree between at front end close, so pig can not get his nose between, as he might break out. Widen the space between as you get towards back end. The back end I close up by one board, in this case ½x6 in., using it to slide up and down. Nail one piece at bottom and one at top, 1x3 in., for this board to work behind, to keep pig from pushing out. If it is a male pig, I use two boards to slide up and down for a fastening, instead of one, with a space between the two, in middle, of 4 inches. I always bed my pigs with some kind of straw, and see that the trough is water-tight."

The Martin shipping crate, illustrrted by Fig. 5, is described by Mr. Martin, as follows: "The exact dimensions vary somewhat according to the pig to be shipped. For a 6 to 8 months pig, it generally requires a crate about 4 ft. 4 in. long, 16 in. wide and 22 in. high, a pig of extra growth requiring one some larger. I always use elm, and construct as follows: First cut off a board 1 in. thick and 16 in. wide, a piece, say 4 ft. 4 in long; nail on cleat of 1x2 in. under each end. This makes the bottom. Then cut 4 pieces of 1x2, 24½ in. long (for a box 22 inches high in the clear); these are for the upright corner pieces. Then cut 8 pieces of ½x3 in., 4 ft. 4 in. long; lay down two of the uprights and nail one of the long slats just even with the ends, aimed for top of the crate; leave a space 3½ in. wide; put on another slat; leave space 3½ in. again; put on another slat; leave space 3 in.; put another slat. This will leave uprights projecting 2½ in below bottom of slat. Make other side the same, and when you put box together put the slats on inside and the uprights on outside. Let lower end of uprights that form the back end of the crate come just even with the lower side of cleat under bottom. This leaves a crack ½ in wide between the bottom and lower slat on side at back end of crate. At the front end let the slat come down on bottom tightly. This will let the upright project down ½ inch; this wants to be sawed off even with under side of cleat under bottom. Put on other side to correspond. Cut 4 slats, ½x3, 18 in. long,

nail them across front end from slat to slat. Cut 5 pieces, 1x3, 17 in. long, which nail across top, commencing at front end, leaving space about $5\frac{3}{4}$ in.; then slat and space till the five slats are used, which will leave space of about $8\frac{1}{2}$ or 9 in. on top at rear end. Then cut 3 pieces of 1x2, 18 in. long; nail one about $1\frac{1}{8}$ in. from back ends of side cleats across the top; nail one across back end of crate, allowing the top edge of end cleat to be just even with the top edge of side cleat. Nail the other 18 in. cleat across the back end, allowing the top edge to project about an inch above the top surface of the bottom. Cut a piece, 1x2, 15 in. long, and nail across the bottom, about $1\frac{1}{8}$ in. from the end. This forms a groove to receive the end, which is cut off of a board 1 in. thick, 10 to 14 in. wide, and should be about 24 in. long. Bore a $\frac{1}{2}$ in. hole through top end of cleat and box end, and put in a wooden pin. Cut a piece, $\frac{1}{4}$x3, 15 in. long, and set on edge on the bottom at front about 5 or 6 in. from end, and nail it firm; this forms the trough for food and drink. The cleats under bottom for strength. The object for

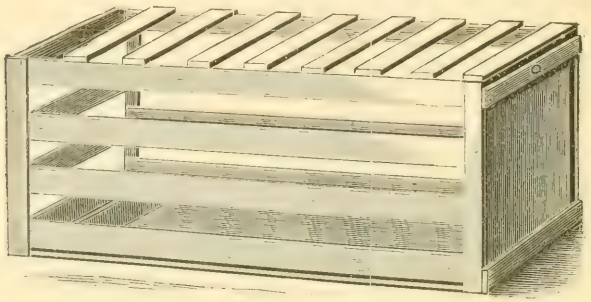


Fig. 5.

leaving a space between the bottom or side slat is to allow urine to escape. The object of cutting all the uprights same length and afterwards sawing $\frac{1}{2}$ in. off is to avoid mistakes in putting sides together. Putting slats on the inside adds strength, as they can not then be pushed off by the pig, and a moveable entrance saves breaking the crate and allowing it to be saved in a perfect condition for future use."

Figure 6, shown on the opposite page, is the style of crate presented by the *Swine Breeders' Journal*, as in some respects superior to those presented in the prize competition. A lengthy description of its manfacture is unnecessary. The advantages claimed for it are: The saving of labor in its construction; the improvement in closing the rear end, having two pieces instead of one; the working up of the material, using the same length in strips for the sides, top and bottom. The illustration is defective, in not showing the feeding apparatus, which is made in the form of an ordinary trough, by placing a single board

across the front at whatever angle may be desired, after the style in Figure 3. The material used is ½ inch stuff, of tough, light wood, and all the strips are four inches wide. The uprights are ¾ inch square. Wrought iron nails are used in its construction.

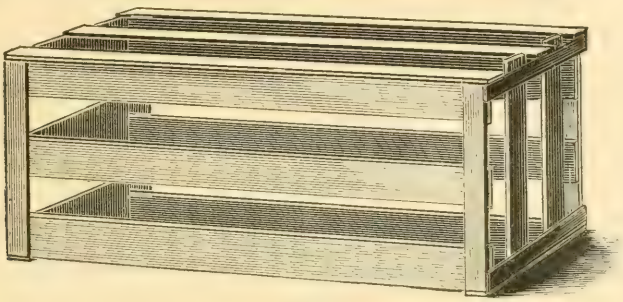


Fig. 6.

The breeder should make up a lot of crates in winter or bad weather, of various sizes, and keep on hand, stored in a dry place, so as to have a crate ready to box and ship a pig in a few minutes. The best material we have ever used is linn plank and sycamore posts; elm boards, well seasoned, are excellent; oak, sawed quite thin, is also good material; pine will do, but does not make as stout a box as the other woods mentioned. A neat, nice box looks business-like and attractive.

ADVERTISING.

Success in swine breeding depends largely upon sales at fair prices. To make sales a man ought to have good stock, and let the public know it. In other words, he must not "hide his light under a bushel." Experience and observation demonstrate that the pioneer in improving live stock in a neighborhood usually has a "hard row to hoe." His less enterprising neighbors rarely buy, unless they can buy stock at common stock prices. It is an old and true saying that "a prophet is not without honor save in his own country." And this saying applies to every improver of live stock. His neighbors are the last ones to admit or recognize his enterprise or patronize him. He must make a name abroad before his neighbors will take hold and help him, or even patronize him, by purchasing stock at such prices as he ought to have. The only way, then, for the breeder, is to put and keep himself before the public. This can be done to some extent by making exhibitions at State and county fairs; but this is a slow process, as men forget names, addresses and locations. Cards handed out help some, but they are usually thrown aside or lost, and by the time the person wishes to buy, the card is gone and the name and address with it. There is no aid equal to persistent and judicious advertising in agricultural and live stock papers. Advertisements in such papers go to the persons the breeder desires to reach. If a farmer has not enterprise and snap enough to take such periodicals, he has not sufficient sand and intelligence for the breeder to waste any time with. He is not up with the times, and you are fooling away your time in trying to interest him in bettering his condition. Leave him for the patent hay fork or some other confidence game. Use the agricultural and live stock papers. They reach the intelligent and progressive farmers, who are the desirable customers, and the larger the circulation among the class you wish to reach, the better. Don't content yourself with one paper, but use several that have their chief circulation in different parts of the country, and keep your advertisement in year in and year out. Spasmodic advertising of a week or two, or a month or so, is better than none, but it does not do the effective work of a standing advertisement that visits

the readers continually. The standing and continual advertisement impresses the reader with an idea of solidity, enterprise and determination that a fitful, spasmodic or occasional one does not. Make your advertisement attractive by illustration or unusual display type, so as to catch the eye. Don't take a little three-line advertisement in one corner that a man can scarcely find, but such a one as the readers of the paper must see at a glance. And it is a good plan to give location of farm from railroad station. To keep step with such system of advertising, it is important to have neat letter-heads to answer correspondence, and a nice circular or manual, giving families you are breeding, number of pigs raised, and when you have them, testimonials from customers as to the character of shipments; add to this such other matters concerning your herd, or advice to breeders, as will make the circular of some value to the inquirer. Wood cuts, illustrating animals of the herd, are good; and, above all, describe particularly the location of farm, the nearest railroad station, the line of road, and if more than than one railroad, mention all. Advertising through advertising agencies is sometimes a good thing, if you can get a good combination of agricultural papers, but the combination of country papers is of little value. The paper that is devoted to your particular kind of stock is the best medium, as it goes to men who are dealing in that kind of stock. Any good agricultural or live stock paper will pay you, if you advertise liberally and continuously. Purchasers that are not personally acquainted with you, are always impressed by the style and matter of you advertisement. Make it neat, concise and attractive. *Do not be afraid to blow your own horn vigorously!* When you get a customer write him fully, and deal squarely with him. Do not neglect to answer all communications and inquiries promptly and fully.

STATISTICS.

The following statistical tables we have taken from the supplement to the Cincinnati *Price Current* of April 22, 1886. They will afford much information as to prices, amount of hog product, and value thereof, handled in the United States, as well as other valuable information to the careful and thoughtful student:

MONTHLY AVERAGE PRICES OF MESS PORK FOR FORTY YEARS.

Monthly and yearly average prices of mess pork in Cincinnati for 40 years, compiled from the weekly quotations of the Cincinnati *Price Current:*

MONTH.	1846.	1847.	1848	1849.	1850.	1851	1852	1853.
January	10.40	9 10	7.50	10.05	8 50	10 80	12 60	16.15
February	10 00	12 60	7.6	10.10	8.65	11.55	13 85	14.75
March	9 50	13 60	7.75	9 40	8.65	12.10	14 75	14.50
April	9 20	13 65	7.80	9 05	9 45	13.60	16 30	14.40
May	9.00	14 50	7.60	9 10	9 30	14.25	16.45	14.75
June	9.00	14 50	8.20	9 10	10.30	14 00	17.60	14 65
July	8 15	14 35	8.55	9 05	10 10	13 25	19 75	14 10
August	8 00	14 20	9 00	9 30	10 00	14.50	19 00	14.00
September	7 00	13 60	9 60	8 40	9.00	15 30	19.50	14.40
October	7 05	9 70	9 85	7 95	9 25	13 30	19 50	14 85
November	7 00	10 2[illegible]	9.60	7 80	10.20	12 50	14.75	12.80
December	7.75	10.80	9.55	9 20	10.50	12.25	16 85	11.60
Yearly Average	8 50	12 60	8 55	8 95	9 50	13 10	16.75	14.25

MONTH.	1854	1855.	1856	1857	1858.	1859	1860.	1861.
January	11 50	11 40	14.30	17 60	12.20	17.30	16 70	16.75
February	12.85	12 30	14 25	18 75	14 75	18 60	17 70	16 85
March	12 20	13 30	14.15	21.00	15.40	17 80	17 25	16.95
April	12 00	15 00	14 85	21 60	17.15	17 00	17 35	16 95
May	12 25	15 70	15 90	22 95	17 10	17.40	17.50	16.40
June	12 00	16.35	17 00	23.25	15 30	16 10	18.10	14 90
July	11 05	18 05	18 85	22 90	15 60	15 65	19 10	14 39
August	11.75	18 70	19.00	24.00	16.55	14.50	19 50	14.50
September	13.40	19.75	18 20	25 00	15 80	14.30	19 05	13.25
October	12 00	20.00	18.10	24.00	15.10	14.25	18.00	12.80
November	11 06	18.60	14 90	14.25	16 20	14 60	16 60	10 75
December	11 85	15 65	16.25	13.45	17.50	16.30	14.35	9.40
Yearly Average	12 00	16 25	13 95	20.75	15.70	16.15	17.60	14 50

MONTH.	1862	1863.	1864.	1865.	1866.	1867	1858	1869.
January	9 50	12 90	20 25	41 10	29 00	20 40	20 70	29 45
February	10 85	14 35	21 50	37 15	28 90	20 45	22 95	33 20
March	11 05	14 05	22 30	30 75	26 50	21 80	24 45	31 55
April	10 50	14 00	24 50	27 50	25 65	22 50	27 75	31 20
May	10 95	13 70	28 00	24 90	30 90	22 70	28 30	30 75
June	10 50	13 25	34 75	25 00	32 30	21 55	28 00	32 45
July	9 75	13 00	43 00	26 25	32 50	23 25	27 95	32 80
August	9 50	13 00	41 25	30 50	32 25	23 50	28 70	33 20
September	9 40	13 40	43 35	31 50	32 75	24 20	28 75	32 10
October	10 25	15 15	40 25	34 15	32 55	21 75	30 60	31 15
November	10 75	16 50	37 00	30 50	28 60	19 55	23 70	31 00
December	10 95	18 70	39 00	27 60	19 90	21 00	26 40	29 70
Yearly Average	10 35	14 35	32 95	30 60	29 30	21 90	26 50	31 55

MONTH.	1870	1871.	1872.	1873.	1874.	1875.	1876.	1877.
January	27 30	20 50	13 30	12 70	15 75	18 75	20 15	17 40
February	26 70	22 15	13 20	13 20	15 05	18 90	22 05	15 90
March	26 40	21 05	12 25	15 25	15 70	20 25	23 00	14 50
April	28 40	19 00	13 50	17 30	17 00	22 10	22 15	15 35
May	29 45	16 75	14 15	17 35	17 75	22 00	20 55	14 75
June	29 10	15 25	13 40	16 25	17 95	19 60	19 30	13 60
July	30 05	14 90	12 95	16 55	21 05	19 85	20 20	13 90
August	28 75	12 25	13 60	16 50	23 50	21 30	17 75	13 05
September	25 95	12 65	13 50	15 80	23 00	21 50	16 45	12 90
October	25 45	12 70	14 10	14 10	.....	22 05	16 70	14 10
November	21 50	12 70	13 35	12 45	20 50	21 40	15 05	12 55
December	18 80	13 60	12 00	15 25	19 50	30 20	15 40	11 85
Yearly Average	26 50	16 10	13 30	15 20	18 80	20 65	19 10	14 15

MONTH.	1878	1879	1880.	1881	1882.	1883.	1884	1885.
January	11 20	8 70	13 20	13 65	17 70	17 35	15 10	12 35
February	10 80	9 95	12 25	14 95	18 20	18 20	17 90	13 05
March	9 95	10 00	11 50	15 10	17 85	18 45	17 80	12 75
April	9 40	10 25	10 25	17 05	18 6	18 90	17 10	12 10
May	8 60	9 90	10 45	16 90	19 55	20 10	17 65	11 35
June	9 55	10 20	11 15	16 45	21 05	18 35	17 45	10 75
July	9 95	9 35	13 40	18 05	22 55	15 65	16 10	10 70
August	10 5	8 40	15 35	18 90	22 25	14 00	18 00	9 90
September	9 30	8 65	16 50	20 40	22 55	12 00	17 25	9 20
October	8 05	9 30	17 60	19 70	24 05	11 30	16 30	8 80
November	7 55	11 20	14 20	8 25	20 30	12 20	13 15	9 60
December	8 00	13 50	13 45	17 10	17 50	14 50	11 75	10 20
Yearly Average	9 40	10 85	13 25	17 20	20 20	15 90	16 30	10 90

MONTHLY AVERAGE PRICES OF LARD FOR FORTY YEARS.

Monthly and yearly average prices of lard in Cincinnati for 40 years, compiled from the weekly quotations of the Cincinnati *Price Current:*

MONTH.	1846	1847.	1848.	1849.	1850.	1851	1852	1853.
January	6 50	6 31	5 62	6 12	5 50	7 25	7 25	9 87
February	5 85	7 50	5 56	5 75	5 75	7 50	7 75	8 94
March	5 75	7 94	5 50	5 75	5 75	7 75	8 18	8 94
April	5 75	8 25	5 50	5 64	5 81	8 00	8 75	8 90
May	5 50	8 50	5 18	5 75	6 25	8 75	9 25	9 44
June	5 12	8 31	5 94	6 00	6 75	9 00	9 37	9 50
July	4 75	8 75	6 37	6 15	6 50	8 25	10 25	9 50
August	4 75	9 31	6 53	6 12	6 25	8 75	10 50	9 62
September	4 81	10 00	7 37	5 75	6 50	8 87	11 00	10 12
October	5 37	9 87	7 00	5 37	6 75	8 00	11 00	10 50
November	5 50	7 37	6 00	5 44	6 75	6 95	10 00	8 94
December	5 87	5 56	6 06	5 37	7 00	6 81	10 25	8 22
Yearly Average	5 46	8 14	6 05	5 75	6 30	7 15	9 49	9 37

MONTH.	1854.	1855.	1856.	1857.	1858.	1859.	1860.	1861.
January	8 22	8.50	9 28	11.37	8.87	11.06	11.03	9 75
February	9 00	8.62	9.44	12 22	8 97	11.69	10 34	9 34
March	8 56	8 78	9.12	13.44	9 50	11.31	10 18	9 06
April	8 72	9.50	9 18	13 81	10.31	11.00	10.25	9 25
May	9 00	9.56	9.62	14.09	10.72	11.31	10.79	8 69
June	9.00	9 81	10 12	14.25	10.31	11.18	11.40	8.34
July	8 81	10 00	11.31	14 37	10.25	11.00	12.40	8.03
August	9 75	10 44	11 75	14.87	10 62	10.50	12 75	8 06
September	10 12	11 31	12.18	15.00	10.59	10 78	12.75	8 00
October	0.00	12.00	12.25	.....	9 94	10.56	11.92	8 12
November	8 69	11.87	10 37	10.40	10 37	10 06	10.44	7.34
December	8 9	10.22	10.78	9.00	10.94	10.09	8.94	7.12
Yearly Average	9 04	10 05	10 45	12.98	10.03	10.88	11.09	8 42

MONTH.	1862.	1863.	1864	1865.	1866	1867.	1868.	1869.
January	6 75	9.25	12.75	22.37	17.37	12.18	12.37	19.00
February	6 84	9.94	12.00	21.62	16.62	12.18	14.12	19.44
March	7 28	10.40	12.69	19 00	19 69	12.72	15.44	18 31
April	7 25	9.81	13 12	17 31	17.31	12 81	16.94	18.06
May	7 62	9.53	13.06	17 25	17.25	12.69	18 94	17.88
June	7 56	9.56	15.50	17.18	16.87	12 12	17.50	19.00
July	7 87	9 50	18.50	20 44	21.37	12.37	17.31	19.12
August	8.56	9 62	20.50	23.28	23.31	12.62	18 62	19.18
September	8.75	9.87	22.12	22 16	18.87	13.00	19.40	18.56
October	8.75	10.44	19.87	20.00	16 06	13.37	18.56	17.06
November	9.00	11.50	21.44	22.62	13.40	12.12	15.40	17.25
December	8 75	12.25	22.62	22.75	11.94	12.25	16.62	18.25
Yearly Average	7 91	10 14	17.06	20 55	17 50	12 54	16.77	18 43

MONTH.	1870	1871.	1872	1873	1874	1875	1876	1877.
January	6 75	11.85	8 87	7 35	8 65	13 40	13.30	10.92
February	15 69	12 62	8 87	7 55	8 75	13.54	12.50	10.15
March	14 06	12 15	8.50	7 90	8.78	13.65	13.37	9 30
April	15 81	11.15	8.56	8 65	9 75	15.35	13.40	9.73
May	6 25	10.57	8 69	8 80	10.50	14.98	11.77	9.35
June	15 94	9.87	8 70	8 25	10 75	12.80	11 00	8.70
July	16.00	10.25	8.60	8.43	11.31	12 65	10.81	8 85
August	16 06	9 00	8 50	8 06	13 72	13 30	10 27	8 40
September	4.97	8 75	8.50	7.94	13 87	13.06	10.40	8.65
October	15 70	8.97	7.60	7 56	12.90	13.40	9 92	8.50
November	13.37	8.80	7 60	6.90	13 25	12 37	9 87	7.96
December	11 53	8.71	7.12	8.15	13.05	12 40	10.18	7 80
Yearly Average	15.15	10.22	8 26	7.96	11.28	14 41	11.32	7.03

MONTH.	1878.	1879.	1880.	1881	1882.	1883.	1884.	1885.
January	7.37	5.85	7.38	8 85	19.05	10.40	8.78	6 87
February	7.25	6.60	7.21	9.80	10.80	11.10	9.48	7 02
March	7.02	6.42	7.11	10 37	10.50	11.10	9 04	6.95
April	6 95	6 09	6.92	10.70	11.20	11.15	8.40	6.90
May	6.66	6.02	6.80	10.70	11.30	11.45	8.10	6.60
June	6.80	6.10	6 65	10.70	11.47	9.75	7.68	6.45
July	6.94	5.87	6.87	11.90	12.30	8.60	7.00	6.52
August	7.31	5.56	7.62	11.25	12.37	8.20	7.65	6.20
September	6 50	5.74	7.92	11.85	12 30	7.8	7.48	6.10
October	6.3	6.10	8.12	11.80	12.57	7.40	7 30	5.90
November	5.80	6.63	8 19	11.10	11.42	7.70	7.05	6.05
December	5.53	7.50	8.43	10.95	10.50	8.65	6.67	6.00
Yearly Average	6.69	6.20	7 43	10 85	11.50	9.45	7.88	6.45

The tables on the opposite page present the export of live stock, and growth of the export trade, for the years therein mentioned.

EXPORTS OF LIVE STOCK.

Foreign exports of Live Cattle, Hogs and Sheep, for sixteen years, ending June 30:

YEAR ENDING JUNE 30.	Cattle head.	Hogs, head.	Sheep, head.
1873	35,455	99,720	66,717
1874	56,067	158,581	125,248
1875	57,211	64,979	124,416
1876	51,593	68,044	110,312
1877	50,001	65,107	179,017
1878	80,010	29,284	184,959
1879	136,720	75,129	215,681
1880	182,756	83,434	209,480
1881	185,707	77,456	173,919
1882	108,110	36,368	139,676
1883	104,444	16,129	337,251
1884	190,518	46,382	273,874
1885	135,890	55,025	234,509

GROWTH OF THE EXPORT TRADE.

The following from the Bureau of Statistics, shows the growth of the export trade in hog products during twenty-six years, to June 30, 1885:

YEAR.	*Bacon, lbs	Pork, lbs.	Lard, lbs.	Total Value.
1860	25,844,610	40,956,680	40,289,519	$ 9,951,612
1861	50,264,267	31,305,810	47,908,911	12,187,454
1862	141,212,786	61,830,910	118 573,307	24,275,246
1863	218,243,609	65,576,075	155,336,596	38,748,625
1864	110,886,446	63,519,400	97,190,765	29,412,085
1865	46,054,034	41,790,990	44,480,136	26,522,274
1866	37,588,930	30,056,877	30.110,451	17,028,031
1867	25.648.226	27,374,788	45,608,031	13,523.477
1868	43,659,064	28,690,133	64,555,462	18,172,481
1869	49,228,165	24,439,832	41,887,545	18,348,936
1870	38,968,256	24,639,831	35,808,530	15,309,647
1871	71,446,854	39,250,750	80,037,297	22,992,023
1872	246,208,143	57,169,518	199,651,660	43,426,519
1873	395,381,737	64,147,461	230,534,207	64,274.987
1874	347,405,405	70.482,379	205,527,471	58,500.686
1675	250,286,549	56,152,331	166,869,393	57,184,630
1876	327,730,172	54,195,118	168,405,839	67,837,963
1877	460,057,146	69 671,894	234,744,233	8 ,371,491
1878	592,814,351	71,889,255	342,766,254	86,687,858
1879	732,249,576	84,401,676	326,658,686	78,738,674
1880	739,773,109	95,949,780	374,979,286	84,838,242
1881	746,944,545	107,928,006	378,142,496	104,660.065
1882	468 026,640	80,447,066	250,867,740	82,852,946
1883	340,258,670	62,116,302	224,7 8,474	70,966,268
1884	386,499,368	60,363,312	265,094,719	69,740.456
1885	409,127,119	72,073,468	283,216,339	64,883,110

THE AGGREGATES FOR EACH YEAR.

The aggregate pounds of product exported each year, and average export value per pound, are as follows: *Bacon includes ham.

YEAR.	Total lbs.	Value.	YEAR.	Total lbs.	Value.
1860	107,090,809	9 30	1873	690,063,705	8 88
1861	129,478,988	9 41	1874	623,415,255	9 33
1862	321,617,003	7.55	1875	473,308,273	12 08
1863	439,156,280	8 82	1876	5 0,331,129	12 32
1864	271 596,611	10.83	1877	764,470,273	10.64
1865	132,325,169	20 04	1878	1,007,469,860	8 60
1866	97,756,160	17 42	1879	1,143,309,938	6 90
1867	98,631,134	13.71	1880	1,230,702,175	6 89
1868	136,904,659	13 27	1881	1 233,015,127	8 49
1869	115,555,542	15.88	1882	798,881,846	10.37
1870	99,416,617	15.40	1883	627,093,446	11.32
1871	191,734,901	12.05	1884	7 4,957,700	9.75
1872	503,029,321	8 99	1885	755,416,926	8 59

MONTHLY AND YEARLY AVERAGE PRICES OF PORK AND LARD.

Yearly average prices of mess pork and Lard in Cincinnati, and highest and lowest monthly average prices, for 49 years:

Calendar Years.	MESS PORK.			LARD.		
	Yearly average, per bbl.	Lowest monthly average.	Highest monthly average.	Yearly average, ₱ 100 lbs.	Lowest monthly average.	Highest monthly average.
1885	$10 90	$ 8 80	$13 05	$ 6.45	$ 5.90	$ 7.02
1884	16 3[illegible]	11.75	18.00	7.88	6.67	9.48
1883	15.90	11.30	20.10	9.45	7.40	11.45
1882	20 20	17 50	24.05	11.50	10.50	12.57
1881	17 20	13 65	20.40	10.85	8.85	11.85
1880	13 25	10 25	17 60	7.43	6.65	8.43
1879	10 85	8 40	13 50	6.20	5.56	6.62
1878	9.40	7.55	11.20	6.69	5.53	7.37
1877	14.15	11.85	17.40	9.03	7.80	10.92
1876	19.40	16 05	23.00	11 32	9.87	13.40
1875	20 65	18.75	22.10	13.41	12.37	15.35
1874	18 80	15 05	23 50	11.28	8.65	13.87
1873	15 20	12.45	17.35	7.96	7.90	8 80
1872	13.20	12 00	14 15	8.26	7.12	8.87
1871	16.10	12.25	22.15	10.22	8.71	12.62
1870	26 50	18.80	80.05	15.15	11.53	16.75
1869	31 55	29.45	33.20	18.43	17.06	19.44
1868	26.50	20.50	30.60	16.77	12.37	19 40
1867	21 90	19.55	24.20	12.54	12.12	13 37
1866	29 30	19.90	32.75	17.50	11.94	23.31
1865	30 60	24 90	41.10	23.55	17.18	23.28
1864	32.95	20 25	43 35	17.06	12.76	22.62
1863	14 35	12 90	18.70	10.14	9.25	12 25
1862	10 35	9.49	11 05	7.91	6 75	9.00
1861	14.50	9.40	16.95	8.42	7.12	9.75
1860	17.60	14.35	19.50	11.09	8 94	12.75
1859	16.15	14 25	18 60	10.88	10.06	11.69
1858	15.70	12 20	17.50	10.03	8.97	10.94
1857	20 75	13.45	25.00	12.98	9 00	15.00
1856	13.95	14.15	19 00	10.45	9.12	12 25
1855	16 25	11.40	20 00	10.65	8.50	12.00
1854	12.00	11.05	13.40	9.04	8.22	10.10
1853	14.25	11.60	16.15	9.37	8.22	10.52
1852	16 75	12.60	19.75	9.49	7.25	11.00
1851	13.10	10 80	14.50	7.15	6.81	9.00
1850	9 50	8 50	10.50	6.30	5 50	7.00
1849	8.75	7 80	10.10	5.75	5.37	6 15
1848	8.55	7.50	9 85	6.05	5.18	7.37
1847	12 60	9.10	14.50	8.14	5.56	10 00
1846	8 50	7.00	10 40	5.46	4.75	6.50

MONTHLY WEIGHT OF HOGS AT CHICAGO FOR TEN YEARS.

Reported average weight of hogs weighed monthly at the Union Stock Yards for ten years:

MONTHS.	1885	1884	1883	1882	1881	1880	1879	1878	1877	1876
January	258	242	262	252	258	265	276	280	253	281
February	240	218	248	229	232	266	236	270	257	262
March	229	204	228	216	217	241	219	242	239	221
April	223	217	226	211	220	230	218	225	231	217
May	226	233	232	209	226	225	225	223	223	228
June	232	226	240	214	233	229	231	229	231	233
July	233	235	244	216	233	250	229	224	227	234
August	228	239	249	225	233	228	237	229	238	243
September	236	238	258	232	234	233	252	240	243	246
October	238	241	250	235	242	247	250	251	252	256
November	250	261	247	248	262	262	264	268	265	262
December	249	272	253	257	268	264	264	277	270	267

SWINE IN THE UNITED STATES.

The number of swine in the United States, of all ages, in January, with totals:

STATES.	1886.	1885.	1884.
Ohio	2,443,457	2,467,128	2,442,701
Indiana	2,774,199	2,801,211	1,642,652
Illinois	3,967,961	4,090,681	4,010,472
Iowa	4,849,008	4,800,698	4,800,998
Missouri	4,1 8,091	4,210,193	4,087,556
Kansas	2,275,178	2,208,911	2,103,725
Nebraska	1,312,784	1,679 200	3,786,383
Minnesota	440,540	431,9 3	411.335
Wisconsin	1,056,265	1,066,934	1,046,014
Michigan	840,682	849,174	840,766
Kentucky	2,032,138	2,052,665	1,954.919
Tennessee	2,122,646	2,021,568	2,127,966
12 packing States	29,280,949	28,080,565	28,255,297
Following States	16,811,094	16,462,092	15,915,736
Maine	70,702	71,416	71,416
New Hampshire	54,404	64,404	55,056
Vermont	74,115	74,115	74,864
Massachusetts	77,616	81,701	80,099
Rhode Island	14,395	14,840	14,549
Connecticut	61,782	62,406	62,406
New York	722,060	736,796	736,796
New Jersey	193,795	206,165	212,541
Pennsylvania	1,103,391	1,114,536	1,092.602
Delaware	44,431	44,431	45,805
Maryland	299,868	209 142	325.413
Virginia	875,256	795,687	820,269
West Virginia	416,133	416,133	424,626
North Carolina	1,356,558	1,432,509	1,364,794
South Corolina	567,181	567,181	578,755
Georgia	1,565,978	1,597.937	1,582,116
Florida	298,108	307,328	313,600
Alabama	1,351,152	1,351,152	1,286,811
Mississippi	1,212,144	1,224,388	1,177,296
Louisiana	580,790	563,874	626,527
Texas	2 411,727	2,233,081	2,011,785
Arkansas	1,692,365	1,659,181	1,550,636
California	1,027,598	978,665	950,160
Oregon	191,600	187,843	184,160
Nevada	14,399	14,256	13,200
Colorado	17,032	14,193	12,342
Teritories	526,514	348,732	277,165
Total in United States	46,092,043	45,142,657	44,200,893

1886	46,092,043	1877	28,077,100
1885	45 142,657	1876	25,726,800
1884	44,200,893	1875	28,062,200
1883	43,270,086	1874	30,860,900
1882	44,122,200	1873	32,632,000
1881	36,227,603	1872	31,796,300
1880	34,034,100	1871	29,457,500
1879	33,766,230	1870	26,750,600
1878	32,262,500	1869	23,316,400

SWINE IN THE UNITED KINGDOM.

Exclusive of those kept in towns and by cottagers with less than one-fourth of an acre.

PROVINCES.	1885.	1884.	1883.	1882.
England	2,036,665	2,207 444	2,231,195	2,122,625
Wales	225,731	217,387	229,964	233,694
Scotland	150,984	159,560	156,598	154,083
Ireland	1,269,122	1,306,195	1,351,990	1,429,930
Total	3,672,5 2	3,890,586	3,969,747	3,940,332

Including the Isle of Man and the Channel Islands, the total number of swine, cattle and sheep in the United Kingdom in 1885 compares with 1884 as follows:

	1885.	1884.
Swine	3,686,628	3,906,205
Cattle	10,868,760	10,472,762
Sheep	30,086,200	20,386,787
Aggregate	44,941,588	43,705,754

POPULATION OF THE UNITED STATES.

The following table shows the census returns of the United States as to population:

1880	50,155 783	1830	12 866.020
1870	38,558.371	1820	9,633.822
1860	31,443,321	1810	7,239,88
1850	23,191 876	1800	6,308,483
1840	17,069,453	1790	3,929,214

For the decade from 1870 to 1880 the increase in population was almost exactly equivalent to 2 per cent. gain annually, with the yearly immigration added. Immigration for years ending June 30 is shown in the following:

1881	669,431	1884	518,592
1882	788,992	1885	395,346
1883	693,322	1886, estimatee	300,000

Applying 2 per cent. increase annually ending the immigration, the population on June 30 for years since 1880 is shown in the following, the immigration of the current year being estimated at 300,000:

1881	51,828,000	1884	56,955,000
1882	53,654,000	1885	58,490,000
1883	55,330,000	1886	59,960,000

PERCENTAGE YIELD OF LARD.

Percentage yield of Lard of all kinds per 100 pounds, of gross weight of hogs, for five winter seasons:

	1885-86.	1884-85.	1883-84.	1882-83.	1881-82.
Chicago	14 96	14.10	13.65	13.50	14.66
Kansas City	14 34	13.84	14.39	14.07	15.04
St. Louis	13.33	13.32	13.39	13.36	13.83
Cincinnati	13.25	13.01	13.02	13.45	13.92
Indianapolis	11.14	12.85	11.89	11.87	12.02
Milwaukee	12.17	12.31	11.33	12.14	12 95
Louisville	11.23	11.05	11.15	11.25	11.68
Average, 7 cities	14.09	13.60	13.31	13.29	14.14
At interior points	12.40	13.31	12.99	13.26	13.18
At all points	13 56	13.51	13.22	13.27	13.87

Percentage yield at interior points by States:—

	1885-86.	1884-85.	1883-84.	1882-83.	1881-82.
Ohio	12.88	12.93	12 59	12.82	12.66
Indiana	12.27	12.43	12.81	13.00	12.18
Illinois	11.85	13.75	13.21	13.21	12 99
Iowa	12.37	13.59	13.32	13.66	14.17
Missouri	12.93	13.25	13.04	13.11	14.13
Kansas	12.65	12.04	13.12	12.80	12.82
Nebraska	13 95	15.80	15.04	14.86	14.04
Minnesota	10.08	9.05	8.92	9.21	9.23
Wisconsin	10.94	10.94	9.64	10.81	9 87
Michigan	10.07	11.31	11.60	11.52	11.50
Kentucky	10.87	12.17	11.63	12.04	11.30
Tennessee	13 18	13.10	12.58	13.03	13.6
Miscellaneous	12.93	13.51	13.74	13.38	12.75
Average	12.40	13.31	12.99	13.26	13.18

WHEAT PRODUCTION, EXPORTS AND CONSUMPTION.

Quantity of wheat produced, imported, exported, including flour, and amount retained for consumption in the United States, for years undermentioned, compiled from official reports:

Year ending June 30.	Production.	Imports.	Total production and imports.	Domestic wheat exported.	Domestic flour exported.	Tot'l exports wheat and flour.	Retained for home Consumpt'n	*Consumption per capita.	Percentage exported.
	Bushels.	Bushels.	Bushels.	Bushels.	Barrels.	Bushels.	Bushels.	Bushels	
1866-67	151,999,906	3,092,509	155,092,406	6,146,11	1,300,106	13,920,221	141,172,185	3 89	8 98
1867-68	212,441,400	2,014,328	214,455,728	15,940,899	2,076,423	26,564,607	187,891,121	5.08	12.39
1868-69	224,036,600	1,830,393	225,866,993	18,557,836	2,431,873	30,143,987	195,723,006	5 18	13.35
1869-70	260, 46,900	1,285,956	261,432,876	36,584,115	3,463,333	54,411,735	207,021,141	5 36	20 81
1870-71	285,884,700	867,489	236,752,189	34,310,906	3,653,841	53,668,920	183,683,269	4 64	22.42
1871-72	230,722,400	2,410,738	233,133,138	26,423,080	2,514,535	39,997,266	193,135,873	4 75	17.16
1872-73	249,997,100	1,841,049	251,838,149	39,204.285	2,362,980	52,545,731	199,292,418	4.78	21.86
1873-74	281,254,700	2,116,777	283,371,477	71,039,928	4'094,194	92,534,479	190,836,698	4 45	32.65
1874-75	309,102,700	367,987	309,470,687	53,047,177	3,973,128	73.212,614	236,258,073	5 37	23 66
1875-76	292.136,000	1,664,138	293,800,138	55,073,122	3,935,512	76,171,343	217,628,496	4 82	25 93
1876-77	289,356,5 0	396, 61	289,732,561	40 325,611	3,343,665	57,513,589	232,208.972	5 01	19 85
1877-78	364,194,143	1,39 ,713	365,584,859	72,404,961	3,947,333	93,419,031	272,165,828	5.71	25.55
1878-79	420,122,400	2,0 8,018	422,190,418	122,358 936	5,629,714	149,508,553	272,681,865	5 58	35 41
1879-80	448,7 6,530	486,106	449,242,736	153,252,795	6,011,419	180,934,478	268,308,258	5 34	40 28
1880-81	498,549,868	211,402	498,761,270	150,565 477	7,945,786	186,475,251	312,286,019	6.06	37.39
1881-82	380,280,090	865,467	381,145,574	95.271,802	5,915,686	122,597.997	258,547,560	4.89	32.17
1882-83	504,185,470	1,075,725	505,261,195	106,385,328	9,205,664	148,785,693	356,475,499	6 57	29.44
1883-84	420,1 4,500	24,329	420,178,829	70.349 012	9,152,260	111.534,182	308,644.647	5.50	26.54
1884-85	512,763,900	2 6,556	512,970,456	84,653,714	10,648,145	132,570,366	380,4 0,090	6.50	25.84

In the compilations of aggregate exports of wheat and flour, a barrel of flour is reckoned at 4½ bushels of wheat since July 1, 1879, and as 5 bushels previous to that date.

*The average of consumption per capita is computed on each crop without reference to the the variation in reserves, from year to year, and includes seeding and all other uses.

CORN PRODUCTION, EXPORTS AND CONSUMPTION.

Quantity of corn produced, imported, exported, including meal, and amount retained for consumption in the United States, for years undermentioned, compiled from official reports:

Year ending June 30.	Production.	Imports.	Total production and imports.	Domestic corn exported.	Domestic corn meal exported	Exports, domestic and foreign.	Retained for home Consumpt'n	*Consumption per capita.	Percentage exported.
	Bushels.	Bushels.	Bushels.	Bushels.	Barrels.	Bushels.	Bushels.	Bushels	
1866-67	867,946,295	34,970	876,981,265	14,880,823	284,281	16,036,262	851,945,002	28.53	1.85
1867-68	768,320,000	50,270	768,370,270	11,147,490	336,508	12,495,786	755,874,484	20.44	1.63
1868-69	906,527,000	90,833	906,617,833	7,647,197	309,867	8,288,685	898,329,148	23.79	.91
1869-70	874,320,000	89,528	874,409,528	1,392,115	187,093	2,140,487	872,269,041	22.62	.24
1870-71	1,094,255,000	111,344	1,094,366,344	9,826,309	211,811	10,673,553	1,083,692,791	27.39	.98
1871-72	991,898,000	58,568	991,956,568	34,491,650	318,840	35,727,010	956,229,558	23.56	3.60
1872-73	1,092,719,000	61,536	1,092,780,536	38,541,930	403,111	40,154,374	1,052,626,162	25.26	3.67
1873-74	932,274,000	76,003	932,350,003	34,434 606	387,807	35,985,834	896,364,169	20.95	3.86
1874-75	850,148,500	38,098	850,186,598	28,858,420	291,654	30,025,036	820,161,562	18.66	3.53
1875-76	1,321,069,000	51,796	1,321,120,796	49,493 592	354,240	50,910,532	1,270,210,264	28.14	3.85
1876-77	1,283,827,000	39,902	1,283,857,902	70,860,983	447,9 7	72,652,611	1,211,205,291	26 13	5.66
1877-78	1,342,558,000	13,423	1,342,571,423	85,461,698	432,753	87,192,110	1,255,379,313	26.38	6 49
1878-79	1,388,218,750	33,869	1,388,252,619	86,296,252	397,160	87,884,892	1 300,367,727	26 61	6 33
1879-80	1,547,901,790	58,876	1,547,960,666	98,169,877	350,613	99,572,329	1,448,388,337	28.88	6 43
1880-81	1,717,434,543	75,155	1,717,509,698	91,908,475	434,993	93,648,147	1,623,861,551	31 55	5.45
1881-82	1,194,916,000	69,621	1,194,985,621	43,184,915	288,942	44,340,683	1,150,644,938	21.79	3 71
1882-83	1,617,025,100	25,989	1,617,051,089	40,586,825	267,207	41,655,653	1,575,395,436	29 04	2.57
1883-84	1,551,056,835	4,894	1,551,071,729	27,648,139	818,644	30,912,713	1,520,159,016	27 14	1 99
1884-85	1,795,528,432	4,507	1,795,532,939	51,834,416	280,510	52,876,456	1,742,656,483	30.19	2.94

*The average of consumption per capita is computed on each crop without reference to the the variation in reserves, from year to year, and includes seeding and all other uses.

In the compilations of aggregate exports of corn and meal, a barrel of meal is reckoned as equivalent to four bushels of corn.

WEIGHT OF HOGS AND LARD COMPARISONS FOR 18 WINTERS.

The average of gross weight of hogs and yield of lard per hog, and the aggregate pounds of hogs packed, and total production of lard, during winter seasons, in the West as shown in the following:

Winters.	Average Gross weight per Hog.	Total lbs of Hogs, gross weight.	Yield of Lard, all kinds.	Total lbs of Lard, all kinds.
1885-86	258.98	1,631,317,504	35 22	221,881,069
1884-85	266.51	1,721,732,330	36.02	232,708,378
1883-84	251.44	1,358,296 767	33.25	179,629,538
1882-83	267 02	1.637,412,675	35.43	217,485,283
1881-82	262.70	1,509,918,846	36 44	309,472,775
1880-81	259.63	1,796.565,82	35.65	246,677,145
1879-80	266 17	1,850,085,647	36 32	252,439,188
1878-79	271.42	2,020,439,080	39.40	294,752,358
1877-78	282.55	1,838,133,703	38 61	251,193,500
1876-77	269.90	1,376.847,612	34.08	173,877,890
1875-76	272.13	1,328,070,026	35 45	173,016,580
1874-75	262 21	1,459,549,321	34.20	190,380,607
1873-74	268.71	1,468,908,713	35.02	191,444,035
1872-73	290 53	1,571,899,103	40 08	216,845,385
1871-72	284 52	1,374,729,231	38 54	188,603,317

RELATIVE COST OF HOGS, PORK AND OTHER PRODUCT.

During the past winter, 1885, the relation between value of green meats and of lard, exclusive of cost of packing, has averaged at Chicago about as follows: Short rib sides, $5.00; shoulders, 3.70; hams, $7.20; lard, 5 70—per pound. On this basis, and with the proportion of yield previously stated, the Cincinnati *Price Current* submits the following table as closely exhibiting the cost of the various leading articles of hog product, at stated prices for hogs:

Hogs, gross.	Sides, green.	Shoulders, green.	Hams, green.	Lard, tierces.	Mess Pork.
3.00	3.98	3.00	5 73	4.89	8 35
3.25	4.31	3.25	6 21	5.27	8.95
3.50	4.65	3.50	6 63	5 65	9.55
3.75	4 98	3 75	7.16	6.03	10.15
4.00	5.31	4 00	7.64	6.41	10.75
4.25	5.64	4 25	8 12	6.79	11.35
4.50	5 97	4 50	8 60	7.17	11.95
4.75	6 30	4 75	9 08	7 55	12 55
5.00	6 64	5 00	9.55	7.92	13.15
5.25	6 97	5.25	10.03	8.30	13.75
5.50	7.30	5.50	10.51	8.68	14.35
5.75	7.63	5.75	10.99	9.06	14 95
6.00	7 97	6 00	11.46	9.44	15.55
6.25	8 30	6.25	11.94	9.82	16.15
6 50	8.63	6 50	12.42	10 20	16 75
6.75	8 96	6.75	12.89	10.58	17.35
7.00	9.30	7 00	13 36	10.95	17.95
7.25	9 63	7.25	13.84	11.33	18.55
7.50	9.96	7 50	14 32	11.71	19.15
7.75	10 29	7 75	14 80	12.09	19.75
8.00	10.63	8 00	15.27	12.46	20.35

In the above, 35 cents per 100 pounds is allowed for cost of lard package. Rules governing the packing of mess pork require 190 pounds of green meat to be packed in each barrel. It is assumed that the cuts for mess pork average about 5 per cent. below short rib sides in value, and that $1 15 approximately covers cost of package and salt; it was higher than this a portion of the time in the early part of the winter at Chicago.

On the basis of calculation here submitted, the average cost of mess pork made at Chicago the past winter has been about $10 18 per barrel; lard in tierces, $6 05 per 100

pounds. The average cost of cured short ribs has been about $5 25 and shoulders $3.90 per 100 pounds; green hams, $7.20 per 100 pounds. The general average for the entire West would be slightly less.

The foregoing shows the cost of the articles mentioned from a given price for hogs. By taking a given price of mess pork to show what would be the relative price of hogs to make the same, and like calculations for green sides, the exhibit is as follows, on the relation of values of product previously noted:

Pork.	Hogs	Sides.	Hogs.
8 00	2.85	4 00	3.01
8 50	3.05	4 25	3 20
9 00	3.26	4 50	3 39
9 50	3 47	4.75	3 58
10 00	3 68	5.00	3.77
10 50	3 89	5.25	3.96
11 00	4 10	5 50	4 15
11.50	4 31	5.75	4 34
12.00	4 52	6 00	4.52
12 50	4.73	6 25	4.71
13 00	4 93	6 50	4 90
13 50	5 14	6 75	5 09
14 00	5 35	7 00	5 27
14 50	5 56	7 25	5 46
15 00	5.76	7 50	5 65
15 50	5 97	7 75	5 84
16.00	6 18	8 00	6.03
16 50	6 39	8.25	6.22
17 00	6 59	8.50	6.41
17 50	6 80	8.75	6 60
18 00	7 01	9 00	6 78
18 50	7 22	9 25	6 97
19 00	7 42	9 50	7.16
19 50	7 63	9 75	7 35
20.00	7 84	10.00	7.53

The relation between prices of mess pork, lard green short rib sides, and cured rib sides, on the basis of the average relation at Chicago the past winter, is indicated in the following, at stated prices for mess pork:

Mess Pork, barrel	$ 9.00	9 50	10.00	10 50	11 00	11.50
Lard, 100 lbs.	5.30	5.62	5 93	6.25	6 57	6.88
Green Short Rib Sides	4 35	4 62	4.90	5 18	5 45	5.73
Cured Short Rib Sides	4 56	4.85	5 14	5.44	5.72	6.01
Mess Pork, barrel	$12 00	12.50	13.00	13 50	14.00	14.50
Lard, 100 lbs	7 2)	7.51	7 83	8 14	8.46	8.77
Green Short Rib Sides	6.01	6 28	6.56	6.84	7.11	7 39
Cured Short Rib Sides	6 31	6.59	6.88	7 14	7.46	7.75

TOTAL PACKING AT THE LARGE CITIES AND ALL INTERIOR POINTS.

Total number of Hogs packed at the seven large cities, Chicago, Cincinnati, Kansas City, St. Louis, Milwaukee, Louisville and Indianapolis, and total at all other or "interior" points, for eleven winter seasons:

	Total at Seven Cities.	Total Interior.	Total All Points.
1886	4,507,171	1,791,824	6,298,995
1885	4,621 054	1,839,186	6,460.240
1884	3,867,485	1,534.579	5,402,064
1883	4,450,940	1,681,272	6,132,212
1882	4,118,978	1,628,782	5,747,760
1881	5,047.488	1,871,968	6,910,456
1880	4,769,934	2,180,217	6,950.451
1879	5,524,142	1,956,506	7,480,648
1878	4,753,017	1,752,429	6,505,446
1877	3,407,103	1.694,205	5,101,308
1876	3,288,122	1.592,013	4,880,135

WINTER PACKING AT THE LARGE CITIES FOR THIRTY-SIX YEARS.

Season.	Chicago.	Cincinnati.	St. Louis.	Milwaukee.	Louisville.	Indianapolis	Kansas City.	Total.
1885-86	2,393,052	333,696	656,109	343,423	122,261	290,500	656,109	4,507,181
1884-85	2,368,217	385,435	442,087	836,645	164,912	316,971	606,787	4,621,054
1883-84	2,011,384	365,451	382,222	265,467	141,704	274,095	427,162	3,867,485
1882-83	2,557,823	425,400	327,004	293,510	125,812	276,017	445,674	4,450,940
1881-82	2,368,100	384,878	316,379	323,119	131,007	249,178	345,817	4,118,978
1880-81	2,781,064	522,425	474,159	325,729	231,269	388,763	339,678	5,047,488
1879-80	2,525,219	534,559	577,793	340,783	231,259	364,021	195,600	4,769,234
1878-79	2,943,115	623,584	629,261	444,221	187,506	472,455	224,000	5,524,142
1877-78	2,501,285	632,302	509,540	371,982	279,414	270,150	188,344	4,753,017
1876-77	1,618,084	523,576	414,447	225,598	214,862	294,198	116,038	3,407,103
1875-76	1,592,065	563,359	329,895	181,972	223,147	323,184	74,500	3,288,122
1874-75	1,690,348	560,164	462,246	236,596	273,118	278,339	73,500	3,574,311
1873-74	1,570,024	581,253	463,793	291,054	226,947	295,766	147,348	3,525,185
1872-73	1,425,679	626,305	538,000	303,500	304,246	195,317	187,221	3,578 668
1871-72	1,218'858	630,301	419,032	315,000	309,512	172,100	83.000	3,147,803
1870-71	918,087	500,066	305,600	241,000	242,135	105,000	36,200	2,348,088
1869-70	688,140	337,230	241,316	172 626	182,000	55,474	25,500	1,702,384
1868-69	597,954	356,555	224,341	129,094	167,209	56,466	16,000	1,547,619
1867-68	796,226	366,831	237,323	159,463	140,980	52,645	2,500	1,755,968
1866-67	639,332	462,610	176,800	133,370	157,071	53,739	.....	1,622,922
1865-66	507,355	354,079	116,760	87.853	90,519	36,000	.....	1,192,566
1864-65	760,514	350,600	185,894	107,130	92,409	55,888	.....	1,552,535
1863-64	904,659	379,623	240,099	141,091	103,267	63,400	.....	1,826,139
1862-63	970,264	608,457	175,000	182,465	116,000	77,000	.....	2,129,186
1861-62	505,691	474,467	84,093	94,761	91,335	42,100	.....	1,292,447
1860-61	271,805	433,799	79,500	51,000	198,751	38,781	.....	1,073,936
1859-60	151,339	434,499	70,326	52.000	251,870	32,276	.....	992,310
1858-59	171,684	382,826	57,500	32,000	288,590	33,217	.....	965,817
1857-58	99,262	446,677	98,000	16,000	253,803	40,480	.....	954,222
1856-57	74,000	344,512	71,531	15,000	245.830	27,160	.....	778.033
1855-56	80,380	405,396	93,700	34,000	332,733	65,030	.....	1,011,239
1854-55	73,694	355,786	89,830	34,000	283,788	34,476	.....	871,569
1853-54	52,849	421,000	90,000	43,000	407,033	44,300	.....	1,058,782
1852-53	44,156	361,000	60,000	no report.	301,000	27,000	.....	793.156
1851-52	22,036	352,000	47,168	no report.	193,000	29,000	.....	643,204
1850-51	20,000	334,000	82,274	no report.	196,000	18,000	.....	650,274
1849-50	.....	393,000	124,000	no report.	184,000	14,000	.....	715,000

YEARLY COMPARISONS.

Number of Hogs packed in the West for the twelve months ending March 1st, for fifteen years:

	Summer.	Winter.	Total.
1885-86	4,954,572	6,298,995	11,263.567
1884-85	4,058,868	6,460,240	10,519,108
1883-84	3,781,036	5,402,064	9,183,100
1882-83	3,210,787	6,132,212	9,342,999
1881-82	4,803,689	5,747,760	10,551,449
1880-81	5,323,898	6,919,456	12,243,354
1879-80	4,051,248	6,950,451	11,001,699
1878-79	3,878,044	7,480,648	10,858,792
1877-78	2,543,120	6,505,446	9 048,566
1876-77	2,307 866	5,101,308	7,409,174
1875-76	1,262,343	4,880,135	6,142,478
1874-75	1,200,444	5,566,226	6,766,670
1873-74	1,062,916	5,466,200	6,529,116
1872-73	505,500	5,410,314	5,915,814
1871-72	250,000	4,831,558	5,081,558

For years ending October 31, the aggregate number of Hogs packed in the West for twelve months, has been as follows:

1885	11,424,812	1877	7,644,428
1884	9,460,932	1876	7,188,001
1883	9,913 248	1875	6,828,569
1882	8,958,547	1874	6,669,644
1881	11,723 145	1873	6,473,230
1880	12,274,349	1872	5,357,058
1879	11,731,896	1871	3,945,251
1878	9.883,990		

WINTER HOG PRODUCT MADE.

By taking the aggregate gross weight of hogs packed, allowing 36 per cent, for sides, 9 per cent. for shoulders, and 11 per cent. for hams and allowing for amount of sides and shoulders made into barreled pork, as indicated by the returns of different kinds of barreled pork made, the following comparisons are arrived at for the winter packing in the West:

	1885-86.	1884-85.
Gross weight of hogs, lbs	1,631,317,504	1,721,732,330
Sides, green, lbs	587,274,302	619,823,639
Shoulders, green, lbs	146,818,575	154,955,910
Hams, green, lbs	170,544,925	179,390,566
Total green meats, lbs	903,537,802	964,170,105
Sides put into barrels, lbs	99,746,215	131,359,910
Sides remaining, lbs	487,528,087	508,463,729
Shoulders put into barrels, lbs	4,048,565	7,702 260
Shoulders remaining, lbs	142 770,070	147,253,650
Sides and shoulders barreled	163,794,720	149,062.170
Sides, shoulders and hams not barreled	809,743,082	845,107,935
Lard made, lbs	221,881,069	232,708,378
Tierces of lard, 330 lbs. each	672,366	705,177
Total product, lbs	1,135 418,871	1,496,878.483

MEATS AND LARD FOR 15 YEARS.

The aggregate meat product of Hogs, packed in the West, and pounds of Lard, for fifteen years, ending March 1, compare as follows:

	Meat product, lbs	Pounds of Lard.
1885-86	1,577,932.305	390,640,521
1884-85	1,497,356,943	364,375,925
1883-84	1,280,065,520	318,471,958
1882-83	1,315,056,380	316,067,863
1881-82	1,468,375,409	363,772,069
1880-81	1,694,253,397	409,874,899
1879-80	1,556,515,812	382,019,860
1878-79	1,579,311,295	408,701,838
1877-78	1,368,612,303	408,701,838
1876-77	1,068,450,173	243,918,870
1875-76	900,411,218	208,831,900
1874-75	955,158,586	221,880,256
1873-74	958,748,419	232,556,195
1872-73	947,494,998	232,212,585
1871-72	802 223,369	196.103.317

The following table shows the numbers of swine in European countries.

Countries.	Years	Swine.	Countries.	Year.	Swine.
Austria	1880	2,727,541	Netherlands	1882	403,618
Hungary	1880	4,160,127	Portugal	1882	971,085
Belgium	1880	646,375	Roumania	1873	837,000
Denmark	1881	527,417	Russia in Europe	1877	10,839,093
France	1880	5,565,620	Servia	1882	1,067,940
Germany	1883	9,205,791	Spain	1878	2,348,602
Great Britain	1884	2,584,391	Finland	1880	154,338
Ireland	1884	1,306,193	Sweden	1882	430,648
Isle of Man, &c	1884	15,619	Norway	1875	101,020
Greece	1875	179,602	Switzerland	1876	334,515
Italy	1881	1,163,916			

The extraordinary increase of our exportation in the last half of the decade from 1871 to 1880 was due to the harvest failures of that period in Europe and the uniformly large corn crops of this country. The result was a greater aggregate value of exports in five years than in the fifty years from 1821 to 1870. The exhibit is as follows:

VALUE OF EXPORTS OF HOGS AND HOG PRODUCTS BY DECADES.

Years.	Dollars.	Years.	Dollars.	Years.	Dollars.
1821	1,354,196	1841	2,621,537	1861	12,190,721
1822	1,357,899	1842	2,629,463	1862	24,298,868
1823	1,291,323	1843	2,110,020	1863	38,844,988
1824	1,489,651	1844	3,236,470	1864	29,498,992
1825	1,832,679	1845	2,991,288	1865	26,485,043
1826	1,892,429	1846	3,883,884	1866	17,044,355
1827	1,555,698	1847	6,630,842	1867	13,563,514
1828	1,495,830	1848	9,003,272	1868	18,190,928
1829	1,493,629	1849	9,245,885	1869*	18,348,936
1830	1,315,245	1850	7,550,287	1870	15,499,400
Total	15,077,898	Total	49,902,888	Total	213,965,715
1831	1,501,644	1851	4,368,015	1871	23,053,413
1832	1,928,196	1852	3,765,470	1872	45,974,672
1833	2,151,558	1853	6,202,324	1873	62,062,389
1834	1,796,001	1854	11,061,016	1874	60,126,476
1835	1,776,732	1855	11,607,165	1875	57,923,845
1836	1,383,344	1856	12,770,548	1876	68,508,005
1837	1,299,796	1857	12,467,029	1877	82,070,671
1838	1,312,346	1858	9,430,272	1878	86,947,233
1839	1,777,230	1859	8,438,069	1879	79,438,936
1840	1,894,894	1860	10,329,516	1880	85,259,331
Total	16,821,741	Total	90,436,424	Total	651,364,976

*Not including hogs; live animals not being separately given.

In the first twenty years in this long period the advance was slow, though the aggregate value in no year fell below one million dollars. A marked acceleration is observed in the latter part of the third decade, followed by a temporary retrograde, and that by a few years of larger

exportation in the fourth. In the last twenty years, however, the development of exportation has been phenomenal. The average annual exportation for twenty-five years, including hogs, with pork products, has been 530,000,000 pounds. If 200 pounds be taken as the average cured product of a hog, as it is very nearly, the average requirement of hogs for exportation has been 2,650,000. The annual home consumption of pork products during the same period has averaged 4,000,000,000 pounds. The average production of twenty-five years is 3,530,000,000, of which the exportation has been 15 per cent. The present consumption, at 70 pounds per capita, is about 4,000,000,000. To avoid error, as to the number slaughtered, it should be observed that the average weights of hogs slaughtered by farmers is much less than that of the packers. The average weight of swine slaughtered is 175 pounds. As a rule, the lower the price the larger the quantity exported.

QUANTITY OF PRODUCTS EXPORTED.

Years ended June 30—	Live Hogs.		Bacon and Hams.		Lard.		Pork.	
	No.	Price per head.	Pounds.	Price per lb	Pounds.	Price per lb	Pounds.	Price per lb
				Cents		*Cents*		*Cents*
1861.....	463	$ 7.06	50,264,267	9.6	47,908,911	9.9	31,297,400	8.3
1862.....	3,306	7.13	141,212,786	7.3	118,578,307	8.4	61,820,400	6 4
1863.....	9,467	10 18	218,243,609	8 5	155,336,596	10.1	65,570,400	6 6
1864.....	9,199	9 45	110,886,446	11 1	97,190,765	11 6	63,519,400	9.2
1865.....	1,400	9.12	45,990 712	22 9	44,342,295	20.5	41,710,20	16.4
1866.....	951	16.25	37,588,930	16 7	3 ,110,451	19.8	30,054,788	15.9
1867.....	3,577	11 21	25,648,226	12.8	45,608,031	14 5	27,374,877	12.1
1868.....	1,399	13.19	43 659.064	12 5	64,555,462	14.6	28,690 133	11.4
1869*....	.....	.....	49,228,165	15 2	41,887,545	17 8	24,439,832	14.2
1870.....	12,058	15.74	38,968,256	15 7	35,808,530	16 6	24,639,-31	3.0
1171.....	8,770	7 00	71,44 ,854	11 4	80.047,297	13.2	39 250,750	11.0
18 2.....	56,110	9.77	246,208,143	8 6	199,651,6 0	10.1	57,169,518	7.2
1873.....	99,720	7.90	395,381,737	8.9	230,534,207	9.2	64,147,461	7.8
1874.....	1 8,581	10.25	347,405,405	9 6	205,227,471	9.4	70,482,379	8.2
1875.....	94,979	11.38	250,286,549	11.4	166,859,393	13.7	56,152,331	10.1
1876.....	78,044	9.85	32 ,730,172	12 1	168,465,839	13 3	54,195,118	10 6
1877.....	35,107	10.74	460,057,146	10 8	234,741,233	10 9	69,671,894	9.0
1878.....	29,284	9.13	592,814,351	8 7	343,667,920	8.8	71,880,255	6.8
1879.....	75,129	9 32	732.249,576	7.0	326,658,686	7.0	81,401,676	5 7
1880.....	83,434	5 05	759,773,109	6 7	374.979,286	7 4	95,949,786	6.2
1881.....	77,456	7.39	746,914,545	8.2	378,142,496	9 3	107,928,086	7 7
1882.....	96,36	14 01	468,026,640	10.0	250,867,740	11 6	80,447,466	9 0
18 3.....	16,129	16.90	340,258,670	11 2	224,718,474	11.8	62,116.302	10 0
1884.....	46,382	13 53	389,199,363	10 2	265,094,719	9 5	†60 363,318	7 9
1885.....	55,025	10.53	400,127,119	9 3	283,216,339	8.0	‡71,649,365	7 2
Total...	982,338	....	1,189,899,445	.....	4,412,934,653	.....	1,444,933,955	.....

*Animals not separately enumerated in 1869.
‡Not including 185,417 pounds of fresh pork.
†Not including 424,103 pounds of fresh pork.

BREEDS OF SWINE IN AMERICA.

In this chapter we give the reader all the information we have been able to obtain from every accessible source, in regard to the name, description, peculiarities, origin, locality time covered, and some of the opinions of the public concerning every breed or combination of breeds of hogs that have at any time had a name and habitation in America, and especially in the United States.

It can be truthfully said that such absolute certainty as will silence criticism or contradiction, can not now be arrived at; on the contrary, there is much confusion in the information now attainable. This condition arises from several causes, and among others, are the following: First and most important, is a dearth of recorded facts; second, imperfect descriptions as to color, form, locality and names of breeds; third, grades often called by the breed name of the pure bred ancestors; fourth, indiscriminate crossing and combinations of blood; fifth, ignorance, prejudice and passion of the early writers: sixth, too much hearsay and jumping at conclusions, which are put down as glibly as though they were established facts. Often the same breed had different names in different localities, and breeds having the same name are given one description in one locality and an entirely different one in other parts of the country; besides, the differences in description are often so marked as to suggest that they were mere grades.

Men then, as now, were human; and, often those who knew most, said the least. The ready and easy writer often knows less than his neighbor who keeps silent. Again, the writers, then, as now, were interested *boomers* of their own stock, and not as careful and painstakingly correct as the historian should be. Newspapers were scarce, the mails slow, men of experience and action were too much occupied with everyday matters and necessities to stop long enough to write their information,or correct mistakes of others, whether obtained from experience or observation.

Our sources of information for this chapter have been various, but we here especially acknowledge our obligations to the *American Farmer*, *Albany Cultivator*, *Ploughboy*, *American Agriculturist*, *Ohio Cultivator*,

Franklin Farmer, *Genessee Farmer*, *Western Farmer and Gardener*, *N. Y. Farmer*, *Farmers' Cabinet*, encyclopedias, agricultural almanacs, New York Agricultural Reports, Indiana Agricultural Reports, early publications, *National Live Stock Journal*, *Breeders' Gazette*, *Swine Breeders' Journal*, and other late publications.

We have tried to get not only names and descriptions of breeds, but the portion of the country covered by each breed, and the length of time of their several existence. That errors and ommissions may be found, we have no doubt, but we have done the best we could to get all the facts, and in doing so, have in several instances, taken the statements of persons as to their recollection of early matters.

We clearly recognize the difficulties of placing before our readers the whole truth, as to every breed, and especially is this true of the earlier times when written evidence is meagre, and to say the least, often unsatisfactory. In current times self-interest, prejudice and ignorance often mar the value of human testimony and it is reasonable to assume that such obstacles have always existed. We are not of that number that believe that only theold times were pure and unbiased; on the contrary, we firmly believe that the people in this age are as good and trustworthy as of old and more intelligent. In current matters we often have the key that unlocks the door of self-interest and prejudice, but for the early times we have not the same facilities for judging of the words and actions of men.

It is not the design to give a history or description of the swine of other countries, except in so far as it may be necessary to describe or give information of the representatives brought here. There can be but little doubt that the early settlers, as they came to this country, brought with them the domestic animals of their native lands, and it may not be amiss to here state that Louisiana and Canada were largely settled by the French; New England, Virginia, Maryland and the Carolinas by the English; New York, New Jersey and Pennsylvania by the Dutch and English; Delaware by the Swedes, while Florida, West Indies, Mexico and the South American States by the Spanish.

We have no very definite information of the kind or quality of swine in any of the old countries mentioned at the date of the settlement of the various colonies, except the general statement that the hogs were coarse, wild, and in a manner, uncultivated. They were, however, divided into two classes, viz.: Large and small breeds. The large breeds were found in England, Germany and North France; the smaller in Spain, Italy and South France. Large, coarse, spotted and white hogs were found in England, north part of France, and some portions of Europe. Reddish, brown and yellow red, were the prevailing colors of swine in Portugal, part of Spain and North German States, while in Scotland and Ireland the hogs were of a dusky, brownish gray color, and one peculiarity of the old Irish hog was wattles or teat like

appendages hanging from the jaws. In Italy, South France and parts of Spain were found the small, fine-boned, black breeds of swine. It was from such stock the first settlers obtained their supply of hogs, and from such gatherings the common or woods hog of the colonies was constructed, or probably constructed itself.

The African slave trade, which commenced as early as 1550, and continued until 1825, was the means of introducing from Africa two breeds of swine into all the countries dealing in slaves, and especially into the New World. This traffic was commenced by Spain, and soon followed by the English, Dutch and French. The first slaves brought to the colonies in America, was by a Dutch vessel in 1620, and they were landed at Jamestown, Va., and by 1776, it is estimated that 300,000 had been brought to the several colonies. In 1776 the Continental Congress resolved that no more slaves should be imported, but when the constitution was framed in 1778, Congress was, by it, prohibited from interfering with the traffic before 1808. At the last mentioned date, the trade was abolished, but as no penalties were provided for violation of the act, but little attention was paid to it. In 1820 the Congress of the United States passed an act declaring the slave trade piracy; Great Britain passed a similar act in 1825, and both countries took active measures to, and did, suppress the trade.

It was, then, between 1620 and 1820, that the two African breeds of swine were introduced into what is now the United States, and most likely the larger part were introduced in the seventeenth century. The African breeds are described as follows:

"The smaller breed resembles the Chinese variety, but are somewhat less, being short-legged, round bodied animals, of a black or dark brown color, the bristles few and almost as fine as hairs, and the tail terminating in a tuft."

The other African breed from the coast of Guinea, is described as follows:

"These animals were large in size, square in form, of a reddish color, the body covered with short, bristly hair, and smoother and more shiny than almost any other variety of the porcine race; the tail long, and the ears long, narrow, and terminating in a point. This variety is also found in Brazil."

We find in the *Ploughboy* in 1820 a correspondent writing as follows: "The African or Guinea make a superior cross with the common hog, rendering all further attempts at improvement unnecessary. This breed should not be confounded with the China, and is commonly called the 'no bone hog,' on account of the very small size of its bones."

Another correspondent in the *American Farmer* says the African or Guinea breed was brought here as early as 1804, and possibly earlier, and were use in the Eastern and Southern States.

In 1820 a New Jersey correspondent of the *American Farmer* mentions

three very large hogs, which were out of an African or Guinea sow, and sired by an English boar. The three hogs are described as almost white

Another correspondent of the same paper, in 1821, says: "There is a valuable breed of swine in the neighborhood of Patterson, N. J., a cross of the English with the African or Chinese, and was brought from the Dutch settlements of South America."

It seems that those African hogs, and especially the larger ones, were introduced into all slave-holding countries, England, France, Spain, Germany, and the American colonies, and prior to that time, the old Engilsh hog was white or spotted—no red or sandy ones.

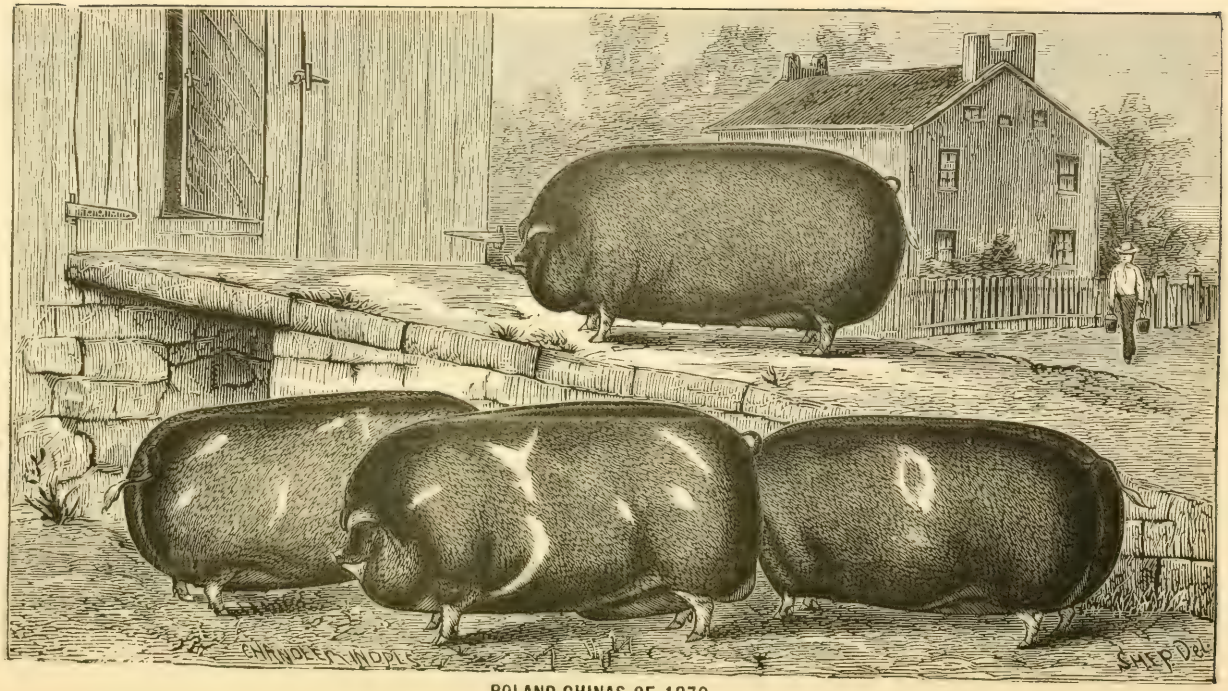
Query: Is not this hog from the coast of Guinea the original factor of the sandy Berkshire of England and the Jersey Red of the United States?

The first of the English improved breeds, of which we have any direct account, is the Parkinson-Bedford-Woburn breed, although we are of the opinion that the old Yorkshires and Suffolks came first, from some accounts we find later. However, the Parkinson stands first in order by specific mention.

PARKINSON, *alias* BEDFORD, *alias* WOBURN.

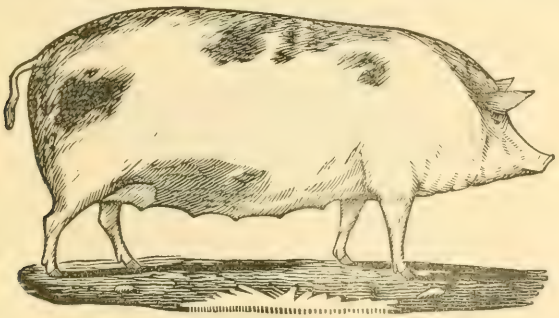
This breed was at different times known by each of the above names; first, as the Parkinson; next, as the Bedford; lastly, as the Woburn. It was introduced into Maryland, near Baltimore, about the year 1800, possibly a year or two earlier. It is very clearly settled that the Duke of Bedford, whose country seat was named Woburn, England, sent by a man named Parkinson, a pair or trio of pigs, as a present to General Washington. Parkinson took them to his farm near Baltimore, and kept them instead of giving them to Washington. There he bred them and sold their pigs throughout the Eastern and Southern States, and, giving them no name, they took the name of the Parkinson breed; later, the name Bedford was applied, when their history became known, and the name Woburn was applied in Kentucky by Dr. Martin, upon his finding in the *Complete Grazier* that name applied to the Duke's hogs. So much for the names. The first mention we find of the Woburn hog in England is in 1806, a writer describing it as a new variety introduced by the Duke of Bedford, and exhibited at Lord Somerville's cattle show, and it is said that they were of various colors, well formed, hardy, very prolific, kindly disposed to fatten and rapid growers, attaining large size.

The hogs which Parkinson brought are described by early writers as of large size, deep bodies, short legs, and thin hair, easily kept and maturing early. But few writers say anything as to color; some, however, say, they were spotted; whether black and white, or white and red, or what colors constituted the spots, we are not informed. One early writer, however, says they were white, with *dark ash colored*



POLAND-CHINAS OF 1870.

spots, and were produced in England by a cross of Chinese upon the large English hog. A gentleman living in Virginia in 1825 then wrote that he was acquainted with Parkinson, that he was an honorable man, and that the story about the Duke of Bedford and his pigs was all *bosh*; that the hogs were Berkshires. This writer has often been quoted by Berkshire breeders as showing that everything good was of and from their favorites. But if the Virginia gentleman was correct, it is difficult to understand why, if Parkinson was such a "perfect gentleman," and came honestly by the pigs, he did not say they were Berkshires and proudly point to the fact that the breed had *existed since the flood!* There is, however, much better evidence that the story which is pronounced all bosh, is true, and it is this: Hon. Timothy Pickering, who was Washington's Secretary of State and confidential friend, introduced this breed into Massachusetts at an early day, as Bedfords, and gave out the story of the Duke of Bedford's present. There is still stronger evidence: The name of the breed from that time forward as a rule, was Bedford, and that, too, in and around Baltimore, where Parkinson still lived. A writer in one of the early periodical says, in



DR. MARTIN'S WOBURN SOW, "BARBARA."

speaking of the Virginian's assertion, that the Parkinsons were Berkshires, "I have seen and owned many of them and *they were not like the Berkshire, old or new, in color or form.*"

So much for their origin, color, etc. They spread rapidly over Maryland, Eastern Virginia, New York, Massachusetts and Pennsylvania, and went West with the early settlers into Ohio, Indiana, Kentucky, Tennessee, Illinois and Iowa. In Massachusetts the spots were bred out and they then became white, while in Maryland, Virginia, and the West and South, they were spotted, and generally called Woburn. Above is an illustration of one owned in Kentucky, by Dr. Martin, in 1840, and is claimed to be a descendant from the Parkinson importation, but it was called by Dr. Martin, "Woburn."

It is said Col. W. O. Vaughn, of Massachusetts, imported Bedfords from England into Massachusetts in 1822. They were spotted. Capt.

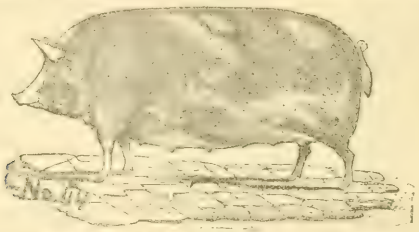
Jas. White, in 1820, imported two Bedfords into Pennsylvania, and a little later Jas. Kersey brought to the same State one (a boar) which measured 22 inches across the shoulders and weighed 800 pounds.

Dr. Martin says: "I have had this breed in Kentucky since 1832."

In 1839, a man in Pennsylvania imported three Woburn pigs, but they had a large share of Neapolitan blood, and were so nearly naked that Dr. Martin says he refused to buy them or their progeny. Dr. M. further says he "has seen and owned no less than *five distinct varieties* called Bedfords," and accounts for the variation by saying that probably many of them were merely grades.

That the Bedfords were extensively used East, West and South, in crossing upon other breeds, the common hog, and grades of all sorts, is beyond all question. They had an existence in name, at least, up to about 1850, or possibly later. Their influence for good can hardly be overestimated. Dr. Martin's were probably as near pure as any of the later animals, and his are described as follows:

"The head, neck, and ear, fine, the latter somewhat rounded and leaning forward and outward; the shoulder generally good, with a sinking behind the shoulder in a majority of them; back otherwise good, and slightly arched; very broad ribs, coming out finely and supporting



White Berkshire and Woburn Cross.

the belly better than is common in any other breed; loin splendid, but high above the shoulders to a very great degree; the rump drooping rather suddenly; the ham large, but not as thick and round as it ought to be, the twist fair; the flank in some good, and in others sadly tucked; the legs generally so good as to resemble the deer much more than the hog; the bone stout; the skin good; handling very fine; the hair long, coarse and harsh; weight, 500 to 600 pounds at 18 months to 2 years, and fattening easily at any age."

Above is an illustration of a cross between the White Berkshire and the Woburn breeds.

Dr. Martin, who lived in Kentucky, was in his day, quite a noted swine breeder, and his writings exhibit much familiarity with the history and forms of the then existing breeds. He made several experimental crosses with the Woburns. One was a cross of White Berkshire boar and a Woburn sow, and the result was the Banter pigs;

another, a cross with Big China and Calcutta breed, the latter he called *Alloyed Woburns*, and he says they were gray and black spotted, and very highly regarded by him. He crossed them with the Neopolitan, and later with the Irish Grazier. The Woburns, or Bedfords, were used in Ohio, Indiana, Illinois and Eastern Iowa, to a considerable extent, prior to 1855, and may fairly be said to have been one of the first of the improved breeds west of the Alleghennies.

CHINA BREEDS.

The White China hog was introduced as early as 1805, possibly earlier. At least we find it almost contemporaneous with the Parkinson-Bedford breed. The first ones introduced were white in color. They were followed by the gray, blue and black, in their order. All the early Chinese hogs were similar in form, although varied in color. They were small, fine boned, hollow backed, belly very low, short legged, short tailed, small headed, very large, massive neck, and small eared hogs, having a remarkable tendency to fatten, and were fairly hardy and prolific. We here insert an early illustration, found in the *Albany Cultiva-*

GRAY CHINA.

tor, and copied from an old English work; it is said to have been a fair representative of the Gray China. The upper part of the body was nearly bare, and on the belly the hair was long and thin. The first Gray China importation into the United States, that we find notice of, was in 1817, the Blue in 1821, and the Black in 1824. Many importations were made from time to time, the last being in 1847, when a pair was imported from Canton, China, and placed on the Oaklands (N. Y.) farm. From the time of their first introduction until the last, they were more generally used in crossing upon other breeds in the United States, than all other breeds, and their use was not confined to any one locality, but was general and extended. There can be no question but that the principal improving blood, both in England and the United States, was the Chinas, and there has been few, if any, of the improved breeds in the United States that has not at some time felt and responded to the magic influence of its connection; its blood was the first and controlling current that soothed and broke the wild, fierce, restless spirit of the old woods hog, and induced that gaunt, hungry, thriftless marauder to be quiet, contented and thrifty.

If John had done nothing more for the "Melican man," he deserves the gratitude of the people for his contribution to America's greatest

product. The Chinese as a breed, kept pure, was not considered a success, on account of its small size, but as an improver of other breeds, it stands without a peer or rival. From the pure Chinese have sprung others called Improved China, Big China, and Spotted China.

The origin of the Improved China is given by Mr. C. N. Berment and others, in 1835, as follows:

"This superior breed of swine was first introduced here by the late Christopher Dunn, Esq. Some ten years since, while passing through Princeton, or New Brunswick, New Jersey, in the stage, his sagacious eye was attracted by a beautiful sow with her litter of pigs running in the streets. Delighted with their appearance, he was determined to possess some of them if possible. He accordingly applied to the driver of the stage to procure a pair of them for him. They were, of course, procured and delivered, and from these two have sprung my Improved China hogs. Their color is various, some white, black and white spotted, and others blue and white. They are larger and longer in the body than the pure China breed, upright or mouse ears, small heads and legs, broad on the back, round bodied, and hams well let down, skin thin, flesh delicate and fine flavored. They are easy keepers, quiet and peaceable disposition, and keep in good condition on grass only. They are not remarkable for size, seldom attaining more than 200 to 250 pounds, and sometimes to 300 pounds. Therefore, they can not, in their pure state, be called the 'farmer's hog,' but their great value is in crossing with the common hog."

Mr. Bennett, who lived near Albany, N. Y., bred, advertised and sold this breed for several years, shipping to Kentucky, Ohio and Tennessee, and other parts of the country. Dr. Martin, of Kentucky, obtained some of them. How this breed originated, or where, we find no trace.

BIG CHINA.

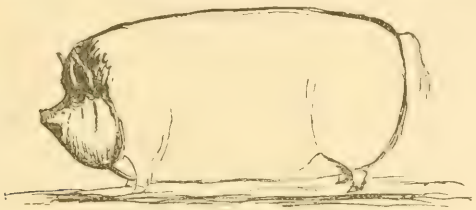
On the authority of Cephas Holloway, an aged Shaker of Union Village, Ohio, we learn that as early as 1816, John Wallace, then trustee of Shaker Village, brought from Philadelphia, Pa., a boar and three sows called Big China hogs. The boar and two sows were entirely white. The other sow had some sandy spots upon her, in which appeared some small black spots. They were understood to be either imported and from imported stock. These hogs and their progeny were used in Warren and Butler counties upon the best breeds then existing. Where this breed was imported from, if at all, is something "no fellow can find out," as no such breed seems to have existed elsewhere.

SPOTTED CHINA.

A correspondent of the *Kansas Farmer* says that in 1836 he lived in Union County, Indiana, (which adjoins Butler County, Ohio,) and that in that year R. Paddock and T. Barnard introduced into Union County a spotted hog, which was called "Spotted China." It is said to have

fattened easily, weighed from 350 to 500 pounds, and claimed to be imported. This was probably one of Bement's Improved Chinas, as some of his were spotted, and he was shipping his stock West and South.

The writer remembers a China hog, owned by his father, who lived in Southeastern Ohio, in 1846. It was kept in a pen made of *four* boards,



CHINA HOG IN 1846.

twelve feet long and twelve inches high. It was so fat and gentle that it never attempted to get over the twelve-inch fence. The above illustration is drawn by the writer from memory.

BAKEWELL.

We find in 1819, a breed in Massachusetts called Bakewell and said to be imported from England. We find no such breed mentioned in English history, and think it and Leicester are one and the same breed, as Bakewell was one of the improvers of the Leicester. The Bakewell is said to have been equal in fattening qualities and more hardy than the Byfield, and was used to, and made a valuable cross, upon the Byfield and Bedford breeds.

WELSH.

This breed is mentioned in the introductory chapter of this book, and illustrated by a large half-breed sow.

GRASS BREED.

This is one of the earliest breeds in the United States, but from whence and when it came, is a conundrum we can not answer. We read of it in Virginia, Maryland, Pennsylvania, New York and Massachusetts, and it is not always described as the same color or form. Some writers describe it as white, and others as spotted, but all say it was a good breed. Its birthplace is much like that given by an Indian. When asked where he was born, he answered: "At Cape Cod, Nantucket, and all along the shore."

Here is a description, taken from the *Ploughboy* of 1820: "Have short legs and noses; white, sleek hair; small bones; are comely, fat, indolent, good natured sort of swine. Will make a growth of one pound per day, and an instance is given of a March pig killed the following October, and weighing *dressed*, 311 pounds and 2 ounces."

One was exhibited at Albany, N. Y., in March, 1821, which was 2 years and 3 months old, and weighed 1,133 pounds. Another one,

weighing 1,068 pounds, at 3 years old, and sold by McNutt, of Salem Mass., to a man in Canada for $200. In a report to the New York Agricultural Society, published in 1860, a writer says: "The breeds are chiefly the common Grass hog, which is a large, white, and rather coarse animal." This breed is probably derived from the English Shropshire swine, improved in this country by a cross with the Berkshire.

Winslow C. Watson, in a "prize essay," published in the New York State Agricultural Society's Reports, in 1855, says:

"The first improvement in swine in New York was effected by the introduction of the Grass-fed hogs, as they were then called. These appeared soon after the importation of the Merino sheep. The swine were often called in derision the 'Merino hog.' I have a distinct recollection of the appearance of those swine. They were not large, but finely formed; the head small; the body round, well proportioned and compact; the legs were short and small boned; the color was spotted, with a dusky white upon a black ground. They were at first almost universally decried, and public sentiment was opposed to them equally with their associates, the Merinos. Their valuable qualities, however, gradually overcame their prejudices, and worked them into popular favor."

In Pennsylvania, at an early day, they are described as of medium size, and white, with occasionally sandy spots. The Grass breed, from all accounts, was a valuable one, and was crossed with all new breeds introduced during its time, and also upon the common hogs of the country. It is as frequently and favorably mentioned from 1819 to 1830, as any other breed, but seems to have been swallowed up and absorbed in other breeds about 1840, as after that it is mentioned, only as a thing of the past. After it had passed away as a breed, it was still traced to as a starter of many of the best breeds and grade hogs. A number of correspondents have attempted to give its origin, and among others we find a Berkshire breeder claiming the Grass breed as Berkshires. It was beyond doubt a mere guess, and a poor one at that, but illustrates the *modesty* of the friends of the Berkshire. If any good hog has appeared in early or late days of American history, where there was a doubt as to its origin, and some Berkshire fellow did not pop up and claim it as "the-original-Jacob-Townsend-blown-in-the-bottle," it has escaped our observation.

BYFIELD.

The Byfield made its appearance in the United States about the year 1812, and two accounts are given of its origin, and as they are consistent with each other, the one being really a part of the other, we are satisfied they are correct. The first account is substantially as follows: A farmer living near Byfield, Mass., saw and purchased at a fair a nice,

stylish, thrifty, white pig, and took it home. It proved a rapid grower, and easy, quiet feeder, and from it sprang the breed.

The other, and to our minds, the better account, is as follows: A vessel, loaded on the west coast of Africa, took on board some swine of that country to be used as provisions; one of them, a sow, was left over, and proved to be in pig. She was given to a widow living in Newburyport, Mass. The sow had a thrifty litter of pigs, white in color, and showed an uncommon aptitude to fatten. They were at first called Newbury Whites.

Gorham Parsons owned a farm near by called "Byfield." He bought some of the pigs at a fair, and took them to his farm and bred them. They proved to be valuable, and had quite a reputation in the neighborhood, and took the name of the farm, viz.: "Byfield." They are described as follows: Short body, small bone, thin skin, thin haired and the hair on the back curly.

The last account seems plausible, and gives a particular account. The only thing against it is, that we do not find any white hogs described as existing in Africa. On the contrary, they are said to have been two breeds; one resembling the Chinese, but smaller, and of a black or dark brown color, and the other large and sandy. There may have been other varieties, and we think the story as given about the vessel is at least founded on facts. The Byfield breed soon became very popular in New England, New York, Pennsylvania, Maryland and Virginia, and were extensively used in crossing and inter-crossing upon the Bedford, Grass, China and common hogs. Prior to 1830 it was the standard commonly used for comparisons, the friends of the other breeds claiming they were the equal or better than the Byfield.

The first account we find of any shipment from Massachusetts was in 1819, when a pair of pure-bred Byfields were shipped to Baltimore. They soon became the favorites at the fairs in Massachusetts and New York, and as a rule were highly commended by all early writers. We, however, find one prominent hog breeder, N. Ingersol, writing to the *American Farmer*, in 1821, saying: "The Byfield is the worst breed I know. Sows have small litters and are careless. They are long, coarse haired, and apt to mange, but are good to cross on almost any other breed. The Byfield followed emigration Westward among the earliest of the improved breeds. It was one of the factors of the celebrated Warren County hog and of the now famous Poland-China. It seems to have been as extensively distributed in its day as any of the improved breeds, and entered into nearly all combinations of blood up to 1855. They were as a rule rather below than above medium size, and when pure, white in color, and of fine form and finish. Hogs, called Byfield, are often described in different parts of the country; some large and coarse, and so different from the general description, that we believe them to have been only grades.

A writer, signing himself "Agricola," says the Byfield was brought from Massachusetts to Ohio, and describes them as a beautiful white hog, ears small and pointing to the nose, broad back, deep chest, large jowls, short nose, dished face, and thin hair, and says, "They are three times better than the common hog."

The Byfield seems to have spent its force by 1845 to 1855, as it is seldom mentioned, if at all, after the latter date. In influence for good the Byfield may fairly contest honors with the China, Bedford, Berkshire and Irish Grazier breeds.

CALCUTTA BREED.

This breed is said to have been imported as early as 1815, and we have several times found a mention of them used as a cross, especially in Maryland and Kentucky. Judging from the name given them they are from India, and were like their near neighbors, the Siamese and Chinese in form and fattening qualities. The largest number that we find mentioned, is seven. They were obtained in England or Eastern States and taken to Clarke Co., Ky. They are well spoken of as a cross upon the large breeds.

SPANISH BLACK.

This breed was one of the early importations. We find an importation recorded as made by Mr. J. E. Bloomfield, who is said to have imported them from Cadiz to Baltimore as early as 1819. The hogs were of small size, fine bone, fatten very rapidly; color, black. In 1829, Mr. Buel (editor of *Cultivator*), of Albany, exhibited at Albany Fair some of this breed recently imported, and they are described as possessing a peculiar disposition to fatten and of fine form. Another importation was made by S. Woodruff in 1831. They are described as very small boned, good feeding, nice, little hogs. The last one imported was by a Mr. Ireland in 1847, and exhibited at the New Hampshire State Fair, and described as very beautiful. They were used as a cross upon other breeds, and no effort was made to keep them pure; at least we find no evidence of their being kept pure, and a good deal, that they were used as a cross. Their influence seemed to have been limited, as they are not often mentioned.

ENGLISH WHITE SUFFOLKS.

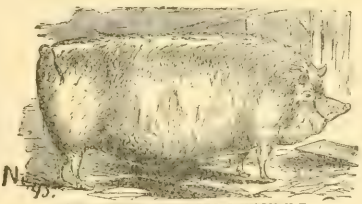
They are mentioned as being in Maryland in 1821, pure, and crossed with the common hog, and they are classed as small breeds. This breed is said to be one of the oldest in England. They are mentioned as being crossed with the Spanish Black, and we find but little further said of the Suffolk until late in the '40's, when Mr. Wm. Stickney made some importations of the Improved Suffolks. In 1848 or '49 Mr. Weir, of Vermont, made some importations, the progeny of which were exhibited at the New York State Fair in 1850.

In 1851, Mr. Lewis G. Morris exhibited at the Rochester Show a boar pig, six months old, called "Westminister." The pig won first prize

at that show. We found an illustration of "Westminister" in the New York Agricultural Society's Reports, and have had it photo-engraved. These later Suffolks, imported by Stickney, were very favorably received, and for a time made quite a favorable impression, especially in the east. They are described as follows: "They are large enough; will weigh, dressed, 450 pounds; this breed has great strength of constitution, remarkable symmetry and justness of proportion, with uncommon tendency to fatten."

SUFFOLK BOAR PIG, "WESTMINISTER."—1851.

One of the later importations was "Lord Wenlock," illustrated by the following cut. He was owned by L. G. Morris, of New York, and was winner of the first prize in his class, at the New York State Show, in 1853.



"LORD WENLOCK," OWNED BY L. G. MORRIS, N. Y.
WINNER OF THE 1ST PRIZE IN HIS CLASS AT N. Y. STATE SHOW IN 1853.

The Suffolks obtained some popularity in New England, New York, Pennsylania, Ohio, Indiana and Illinois. They were very highly commended for retail fresh meat market hogs. They were used considerably as a cross upon Mackays, Bedfords and other large breeds, and in Indiana, from 1850 to 1855, the Suffolks were quite common and used pure and as a cross upon Leicesters, Polands, and other breeds. They have at all times, since their first introduction, had quite a number of steadfast and enthusiastic friends, but have not proved generally popular.

BLACK HAMPSHIRE.

This breed was introduced from England as early as 1821, and probably earlier, into Maryland. The breed is described as black, an easy

keeper, and of small size. They do not seem to have attracted much attention or attained any great degree of popularity, as we find them mentioned but once or twice, and then only as existing in Maryland.

SHORT-LEGGED BREED.

In 1821 we find a correspondent mentions two handsome boars and sows of the Short-legged breed, at a New York county fair, "surpassing anything of the kind we ever saw." This is the only information we are able to find in regard to them. From whence they came and whither they went, we know not.

WHITE'S BREED.

This breed seems to have existed in Massachusetts in 1821, and took first premium for boars and second premium for sows at the Massachusetts Agricultural Society's exhibition for that year. We suppose it was a local breed, or possibly a grade of some other breed, and White held still long enough to have them dubbed "White's breed." Here is an opportunity for another claim for the Berkshire.

LEICESTERS, *alias* BAKEWELL.

This breed was imported from England into Massachusetts prior to 1819, and called Bakewell; in 1823, into Pennsylvania from England, as Leicesters, and was awarded first premium by the Pennsylvania Agricultural Society for best boar. They seem to have reached a considerable degree of favor in Pennsylvania, Massachusetts and New York, and gained some standing in Ohio, Indiana, Kentucky, Tennessee, Iowa and Illinois. They were white or light spotted in color, and classed as a large breed. The breed was considerably used in crossing upon other breeds and upon the common hog of the country. We find an account in the *Albany Cultivator*, in 1844, of four hogs, a cross of Leicester, attaining an average of 515½ pounds, the youngest being 13 and oldest 19 months of age. At the New York State Agricultural Society in 1844, a boar of this breed received a commendation, and in 1845, at the same fair, first premium boar was of this breed, and first premium sow was a cross of this and Berkshire. From 1844 to as late as 1855, this breed was quite common in Ohio, Indiana, Illinois and Iowa.

SOLIPEDE, OR HORSE-HOOFED.

This breed came originally from Sweden, and was introduced into Delaware Bay Colony, by the Swedes, at a very early day. Its color was a dark brown or grayish black, and instead of the divided hoof, as most other breeds of swine, it had a solid hoof like a horse. A few specimens of this breed may be found in several States. We know of some being in Southern Illinois, and recently heard of a few in the Far West. They seemed to have had little to recommend them, except the peculiarity of their feet. They were objects of curiosity rather than profit. They are sometimes called *mule foot swine*.

ANGUS AND DISHLEY.

In 1821 there existed in Maryland, near Baltimore, a breed of hogs

by the above name. What their form, color, or peculiarities were, we have no information. They are simply mentioned as being one of the then breeds upon the farm of the editor of the *American Farmer*. We see no further notice of them. We find the Dishley breed mentioned as at one time being among the celebrated kinds of Mr. Bakewell's stock, and are described as a closely built, black hog, of slow growth. What the form and color of the Angus and Dishley we are not informed.

ESSEX.

The first notice we find of this breed in the United States, is in 1821, in Massachusetts. We suppose them to be the old-fashioned Essex that were part black and part white, not spotted, but generally had black head, neck and rump, and a white belt around the body, sometimes extending over the shoulders. A sow, a cross of this breed with a Blue China, owned by John Prince, received first premium at Massachusetts Agricultural Society in 1821.

In 1839 we learn that a Mr. Henry Parsons, of Canada, imported and kept near Massilon, O., a boar and two sows of the Black Essex and Sussex breeds, and two sows, half Berkshire and Sussex. "They had an uncommon finish, almost polished, a cleanliness of head and legs, fullness and liveliness of the eye that showed fine breeding in a marked degree. They were remarkably uniform, not large, but of exact proportions and great aptitude to fatten. They were light in belly, broad and deep in chest, wide in ribs and loin, with strong, arched and well coupled backs."

In 1846, this breed is mentioned as one of the best in New York for the fresh meat market.

A correspondent of Albany *Cultivator*, Vol. 3, says: "The Essex is closely allied to Sussex, but have been more highly improved. We are not aware that any of the improved breed have been brought to this country."

In 1847 we find a notice of the importation of a *White Essex*.

Mr. Walson in his prize essay, published in the New York Agricultural Reports of 1885, says:

"The Improved Essex, which is the latest importation of swine, occupies an intermediate position in point of size between the Berkshire and Chinese or Suffolk. * * Specimens of this breed, which have been exhibited by Mr. Morris, of Westchester County, possess rare beauty. Although black, they are said to be free from any discoloration of the skin. Mr. Morris says: 'The meat of the Improved Essex is of a very superior quality, the fat being firm, and the lean white, fine grained and rich flavored.' It is affirmed that they were not subject to cutaneous affections."

In later years a number of importations have been made, and a few herds are kept in New York, Michigan, Wisconsin, Kentucky, Tennessee, and a few other States. Quite a number are raised in Canada.

Some representatives of this breed can now be found at nearly all the State and larger fairs.

MACKAY.

This breed is said to have originated as follows: A gentleman living in Boston and owning a farm near there, was also a ship owner, and for many years followed the sea. It was his custom when sailing to various parts of the world to procure at the different ports he entered all breeds of hogs that seemed to be good, and bring them home and place them on his farm. About 1820 to 1825 he retired from the sea and gave his farm and stock his exclusive attention. He commenced by crossing the various breeds of swine he had gathered together, and succeeded in producing a breed which was called by his name. It is said "to have been excellent to fatten at any age, grew rapidly, and at 18 months reached a large size, viz.: 600 to 800 pounds."

An early writer says of it: "The specific characteristics are: The head short and small, chest very broad, back tolerable broad, rather falling below than rising above a straight line, legs short and small, constitution not so hardy as Bedfords, disposition more quiet and peaceable."

In 1832 we find this breed mentioned as a "peculiar and excellent breed," and receiving many premiums in Massachusetts. They seems to have been a great favorite in New England and parts of New York for many years, both pure and as a cross upon other breeds.

A writer in 1847 says: "A few of the Mackay breed are still to be found pure. There is a boar on Mr. Webster's farm that is now thirteen years old, still vigorous, and is as well known in Massachusetts as the Blackhawk horse in Vermont."

Although quite popular in the East, we find but little mention of it west of the Alleghenies. It is claimed that at an early day in the history of Iowa a few pigs of this breed were taken to that State.

The breed was used freely as a cross, especially with the Bedfords, Byfields, Berkshires, Suffolks and upon common stock. As a breed they did not last very long, and but few, if any, could be found after 1850. They were usually white in color, sometimes having a few small spots of black or sandy color.

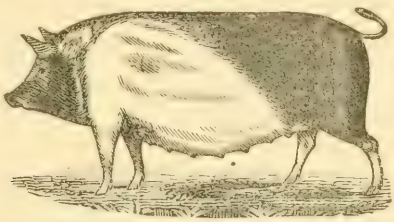
NORFOLK THIN RIND.

This breed was first imported from England in 1830 by Henry Degroot, of New York, who brought over a pair. The boar was black and white, and the sow white. They seemed to have attracted but little attention East.

Later a similar breed of hogs is found in the interior parts of Kentucky, known as the Thin Rind or Rhinoceros. t was a small breed, and said to have made a very successful cross upon the common hog. The pure Thin Rind is described as follows: "Their color is not fixed; have seen jet black and pure white, but are commonly lightish, never

spotted, exceedingly prolific and better nurses than any other breed. They are as lively and sprightly as squirrels, carrying their tails curled over their backs, and in constant motion as they are feeding or moving about." Below is an illustration of one in 1842.

It is claimed that the ancestors of the Kentucky Thin Rinds were imported some years prior to 1842 from Tonquin, China, by a merchant of New Orleans, and from thence brought to Kentucky by Capt. John A. Holton, of Franklin County. They are generally supposed to be nearly identical with the Siamese. We are of the opinion that this last claim is not well founded, as the Siamese swine so far as we are advised, are black. This breed became quite popular in Kentucky, and some of its grades, which still retained the name, were taken by the early emigrants from Kentucky to Southern Illinois, and hogs of that description could be found in that locality or part of the State known as Egypt as late as 1870. A few are reported as having been taken to Southern Indiana. Whether any hogs of this breed or its grades still exist in Kentucky and Southern Illinois, we cannot say. This breed was, however circumscribed and confined to narrow limits, and never obtained much popularity outside of Central Kentucky.



THIN RIND OR RHINOCEROS.

BERKSHIRE.

Before entering upon the history of this breed, it may be well to call attention to a few facts that may aid the reader in forming opinions as to this and all other breeds of swine. There were in early times, and are, in the nineteenth century, but 18 counties (called *shires*) in England where improved breeds of hogs were, and are now, cultivated. Those counties embrace an area of 28,398 square miles, being a little less than one-half of the total area of England, which contains 58,320 square miles. As a comparison in size, Ohio has 39,964 square miles, so that the extent of what is known as the hog-raising region of England is less than the State of Ohio by 11,566 square miles. Of the whole number of counties of England so engaged in breeding, the principal improved breeds of swine have an area of 11,401 square miles, and of that York is the largest and Berks the smallest. As a rule the breeds of England take the name of the county with "shire" added. Thus we have Berkshires from Berks County, and Yorkshires from York County. There are

exceptions to this rule, such as Essex, Suffolk, etc., and one, the Cheshire comes from Chester County. Another fact may be taken as a rule: The white hogs of England are grown in the North and East counties, while the dark and red colored ones are produced in the South and Southeast counties or shires. The counties where African slavery most abounded were the Central and Southern counties. The hog producing counties are nearly all connected, so that it is plain that in early times it was easy to intermingle the different so-called breeds. That the breeders in different counties did so intermingle and cross the different breeds is affirmed by all the old English authorities, and that the hogs of each county took the name of such county, is also well established by the same authority, and by the further fact of the variety in the color of hogs of the same name. The small extent of territory, the number of breeds, indiscriminate crossing, coupled with the fact that purity of breed was not so much regarded prior to 1850 in England as a profitable hog, all indicate that absolute purity of any breed is a myth, and in support of this view no English writer prior to that period contended for such a thing. The folly of attempting such an absurdity was left to Americans.

Again, if the Berkshire was the best breed in all England, and the oldest, why was it not sooner known as such in America? Why did it come here in disguise, as its friends have been wont to claim? One would have supposed that if it had been at that time such a grand and well known breed, that it would have come early and often, and in its true and glorious name, with banners flying, rather than sneaking in under the name of Parkinson, Bedford, or English breed.

In the past few years it has been claimed that the first importation of Berkshires in the United States, was in 1821, by an Englishman named Brentall, and that they were landed in New Jersey. This is upon the authority of Mr. A. B. Allen, of New York, who says he obtained the information from a great-grandson of Mr B. When Mr. Allen obtained this remarkable information he does not say. The agricultural papers of that day have no mention of the arrival of such hogs, nor have we been able to find any recorded trace of such an event. If such an importation was made it was well and successfully concealed, and the hogs proved failures, for we find no mention of their progeny, and no further attempts in that portion of the country to bring any more.

The first importation of Berkshires, as such, that we find any mention of, was that made by Mr. Hawes in 1832, and the next by Mr. Joel W. Bacon in 1834; both importations were into New York.

Mr. C. N. Bennett, of Albany, N. Y., writing under date of January 27, 1835, says: "My swine consist of the Improved China; also the Berkshire breed, imported and introduced into this vicinity by S. Hawes, Esq., who removed from England and settled about three miles west of this city. This, I think, is the farmer's hog, for they are of

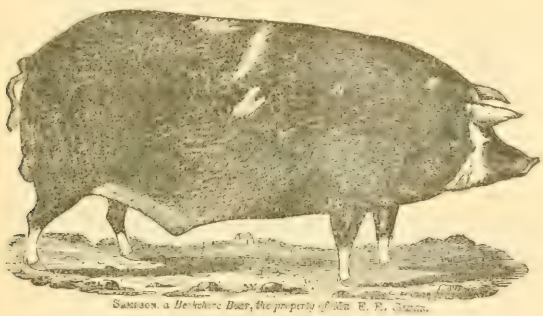
great length, round body, short in the leg, and a little larger behind than the China; easy keepers; and may, I am informed, be fattened to 500 or 600 pounds."

Mr. Bennett indorses the following description: "The Berkshires are distinguishable by their color and shape. Their color is spotted white, and some are sandy, with small black spots irregularly all over them—a few are entirely sandy. The hair is long and thinly set, but

BERKSHIRE SOW, 1835.

much curled, looking very rough, and the real true breed feather-eared which looks rather unseemly, but it is not found to be an imperfection."

In his report to the New York Agricultural Society, 1838, Mr. J. Buel, Chairman, says: "The Berkshire seems now to be in the ascendant. They have been most in demand during the last two years, have commanded high prices, and have been sent in considerable numbers from this city to almost every part of the Union."



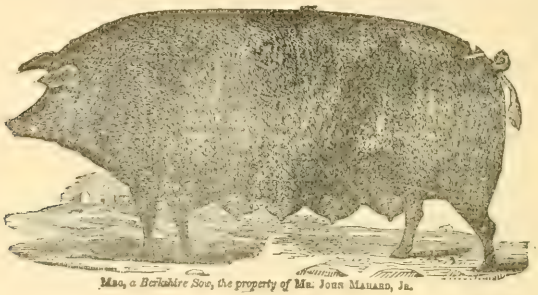
SAMSON, a Berkshire Boar, the property of Mr. E. P. Prince.

The above is an illustration of one of the descendants of the Hawes' importation, as they appeared in 1842.

In another article, Mr. Bennett says: "The Berkshires imported in 1832, of which I came in possession in 1835, and from which have originated pretty much all the Berkshires now generally introduced in all parts of the country, are of the following description: The color is invariably black, with white spots on the body, feet *sometimes* tipped

with white, some white on face and nose; have now imported a boar from a different strain, larger and lighter colored than former importations."

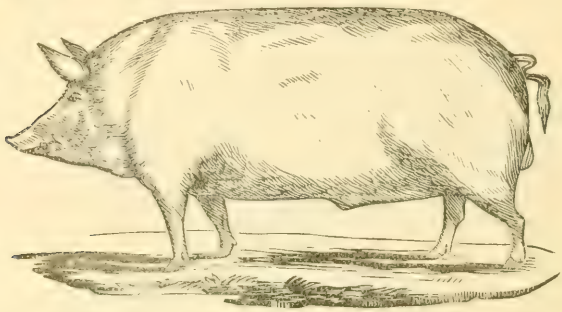
The following illustration shows no white whatever, and she is said to have descended from the Hawes importation. Whether this was the fault of the artist or the correct color of the sow, we do not know. This cut was taken from an advertisement appearing in 1842. In 1838-



Mag, a Berkshire Sow, the property of Mr. John Mahard, Jr.

39, in the Albany *Cultivator* there were twenty one persons advertising swine for sale. Of these, twelve were Berkshires, two Chinas, one Irish Grazier, one Byfield and Berkshire, one Belmont, one Woburn, one Neapolitan and China, one Mocha and Berkshire, and one Berkshire and Grass.

In 1839, Dr. Martin, of Kentucky, imported from England a *White*



White Berkshire Boar, *sent to Dr. Martin from England in 1839.*

Berkshire boar. It is said to have been the finest animal in Kentucky in its day. We here reproduce the cut.

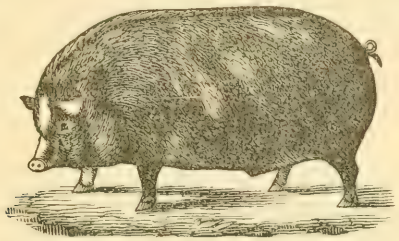
John Mahard's Berkshire sow, Fanny, as illustrated in *Western Farmer and Gardener*, shows face and most of jowl white, three large spots on left side, and ears lopped.

A writer in 1839 says: "Where the Berkshire shows mostly black, it indicates the Siamese cross; and the black broken with white indicates the Chinese cross."

The Berkshire boar, Newberry, illustrated by an engraving in *Western Farmer and Gardener*, has several large white spots and level ear, and in shape much like the Poland China. The celebrated boar, Windsor Castle, as shown by an illustration in the same paper, is black, upeared, long nosed, no jowl, and long in leg.

The illustration on this page of the barrow, Daniel Lambert, shows another Berkshire which is said to have been bred back to the Siamese ancestor.

Mr. A. B. Allen, writing in 1839, says: "A new boar, from Col. Williams' late importation, has been added within a short time to the piggery. He has good points and promises, when full grown, to be of great size. His color, however, and some other characteristics, are different from the old stock. It was merely accidental in Mr. Hawes bringing over animals with so much black in them, as those who have *long resided* in Berkshire, England, tell me that the original color of this race abounded quite as much in white as black spots. There are



THE BERKSHIRE BARROW, DANIEL LAMBERT.

other points besides color, to distinguish this superb breed of hogs, for instance their great thickness of ham and shoulder; long, straight, round barrel; thin hair and pointed ears; these make them recognized at once to those who are at all conversant with Berkshire blood."

From the foregoing testimony it seems that from 1832 to 1842 there was little uniformity of color in the Berkshire, and not much more in shape of head and ear, or in other words, they were not a uniform breed in England or United States. Some were small, others very large. Some white, others spotted, black and white, others black and sandy, and still others nearly black. Some had upright ears, others drooping, and still others that stood out straight or loose, and they remained in that condition in the United States until after 1850. The simple truth is, that all hogs obtained from the shire (county of Berks in England were called Berkshires, and all attempts to create an impression in the minds of the present generation that the present Berkshire has existed as a breed since the time when the memory of man runneth not to the contrary, is not supported by the facts.

Old English writers do not make such claims. It is the creation of a

snobbish American brain. Mr. Allen, in his recent *History of the Berkshire*, now claims that he talked with aged men in England who told him that the breed had been known by them from earliest childhood, and one man in Berkshire, England, who told him his father said they had existed there for over two hundred years, or words to that effect. He, therefore, builds on such hearsay a theory that the Berkshire is the oldest breed of England. How much this is worth is easily illustrated by numerous examples in everyday life. We will cite one noteable illustration. David Magie says he originated the Poland-China hogs and that there is no Berkshire blood in them. How many men rely upon that statement? On the contrary, most persons believe that Mr. Magie is mistaken on both his propositions.

A thing is not necessarily good and better than anything else because it is old. If a breed of hogs is only fifty, or even thirty years old, and reproduces itself unerringly, it is as valuable as though one thousand years old.

In a report on agriculture and live stock, published in Report of New York Agricultural Society for 1850, on page 539, we find this statement: "In England the belief is strong, that unless the Berkshire is crossed with the Chinese, or other Asiatic blood, once in six or seven years, they will degenerate in shape and quality."

If such a belief was strong in England, is it not reasonable to suppose that the breeders in England acted upon such a strong belief?

A number of other importations of Berkshires were made from 1835 to 1845, and the breed was boomed so effectively as to cause some of the representatives to be sold for high prices and to all parts of the country. All that could be raised, as well as many grades, were sold. Bement, Allen and others were the active men East, while in the West were Mahard, Beach and others. Public expectation of the breed had been raised by systematic puffing to a lofty pinnacle, but the cold, butchered results caused the breed to drop as quickly and heavily as the rise had been rapid and easy.

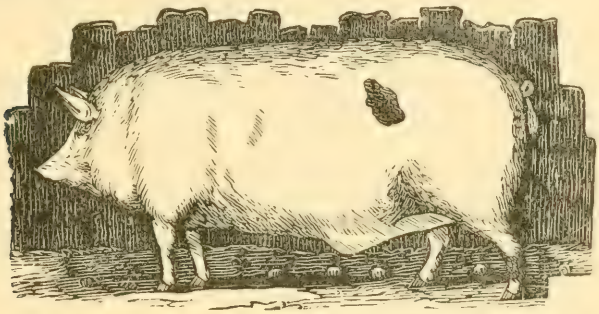
We give a few of the many criticisms on the *shorn* Sampson. A writer in Virginia, in the fall of 1845, says: "I fattened 80 head; they were 12 to 18 months old; had been fairly kept all summer; and in the fall fed two and one-half months on full feed of corn, and the average weight was 120 pounds. This is the common experience of my neighbors. After this, I got rid of them." Another writer sums up objections as follows: "1st, color; 2d, too small; 3d, too much lean; 4th, flesh coarse grained." Another, Ralph Philps, says he is one who suffered by the Berkshire excitement, both in money paid and worthless hogs. "I gave them a fair trial. 1st, they were generally small, though I had some that grew large enough; 2d, never found any delicate meat for families, fat was soft and oily; 3d, furnished but little lard; 4, great eaters—bad as a common hog—and other reasons too

numerous to mention. It is the poorest breed I ever tried." The foregoing are given as samples. We have given both sides of the question, from friends and foes.

This breed became so unpopular for many years that but few could be found in 1850, and they had but few takers. Later they rallied again, and later importations had more uniformity of color and shape, but they have never regained their former popularity, and are not now in general use by farmers; on the contrary they are surpassed by several other breeds. They are largely and widely distributed, some representatives being in almost every State and in Canada.

BELTIES, OR BELTZ.

This was a so-called breed, arising from a cross of the Berkshire and Irish Grazier, and was for a while quite popular in Kentucky, but they had only a brief season. The accompanying cut illustrates a barrow of the Beltie breed.



BELTIE, OR BELTZ.—1842.

William Bell, of Kentucky, in 1839 advertised in the *Franklin Farmer* that he "had just received from Europe on consignment a few pigs of a superior breed, called Beltz, being a cross of Berkshire and Irish Grazier. This breed of hogs is much esteemed for rapidity of growth and the great weight they attain."

S. E. Litton, of Millersburg, Ky., advertised in the *Franklin Farmer* of August 30, 1839, this breed under the name of the Improved Breed, and describes them as regular *white and spotted color*.

This *breed*, as it is called, seems to have been considerably used in Kentucky, and possibly some in Ohio.

PIKE'S HOGS.

In *Franklin Farmer*, January, 1839, we find a challenge by Pike to show his stock against the world at the Lexington Fair that year for silver cups: For best boar and sow, $30 silver cup; for second best, $20 cup; and for best boar and sow, not over 5 nor under 10 months, a $20 cup; second best, $10 cup; for best pair of pigs, not over 3 nor under 2 months, $20 cup; second best, $10 cup. He says: "Pike's stock

has neither blood nor pedigree, but can walk without hauling." Pike seems to have *bluffed* the Kentuckians, as we find no account of any such contest at the fair mentioned, nor do we hear of Pike's stock overrunning the surrounding country.

IRISH, OR RUSSIAN.

In 1832 Hon. Live Lincoln, Governor of Massachusetts, in speaking of the introduction of the Bedfords, says: "It has taken the place of a long-legged, long-nosed, flat-sided, thriftless race, called by some Irish and by others the Russian breed." We hear no more in the East of these so-called breeds, and we infer that he used those names to describe the common hog.

ENGLISH LARGE WHITE.

A. McMahon, of Union Co., Indiana, imported some large white hogs from England, one of which weighed 1,160 pounds. They grew to an enormous size and required four years to mature. They seemed to have been used in 1832, but whether this breed was large Yorks or Suffolks, we can only conjecture.

BARNITZ BREED.

This breed is mentioned as existing in 1832 in York, Pa., obtained by crossing Parkinson upon common Chester County stock. They keep fat enough for good pork on grass alone, and pigs farrowed in early spring weigh in December following 200 to 250 pounds, dressed; flesh very fine, and bones very small.

Barnitz, in *American Farmer* of 1833, says of his hogs: "They are a cross of Parkinson on Chester County stock, and the latter were a cross of China, English, White Suffolk and common hogs. My hogs were shaped like the China, but had more growth, and were of sandy color, with sandy spots."

SWISS-RUSSIAN.

An Ohio correspondent of the *American Farmer*, Vol. XV, page 231, says: "We have now Byfield, Swiss and Russian. Of these the Russian is less profitable, being too small and fat to breed well, but when crossed with other stock make good hogs, but not equal to Byfield or Swiss. Mr. Roberts, of Indiana, prefers Swiss, while Mr. B. Smith, of Kentucky, prefers a cross of Swiss and Byfield. The Swiss hog is a dark brown, lengthy and round bodied, big boned, hair thin and very coarse, very prolific, weighing 400 to 500 pounds at 18 months to 2 years old."

From this it seems that the Swiss and Russian were in Ohio, Indiana and Kentucky prior to 1833. The reader will observe that the above description of Russian does not tally with a description of Russian heretofore nor hereafter described.

MOCHA, OR MOCHO.

This breed originated from a boar imported from the Island of Mocha (off the coast of Chilli). They were of small size, small bones and

easily fattened. We have been unable to fix the date of the aforesaid importation. The *breed* had a short career in the East, covering a period of ten or twelve years, and is not mentioned as ever having gone West. It seems, like many others, to have been swallowed up by crosses and merged in the common hog, that yawning gulf that has entombed so many short-lived breeds. It met the enemy, and after a brief struggle, was theirs.

POLAND.

Some latter day writers have insisted that no such breed ever existed. They are not supported by the facts. The Polish or Podolian hog of North Germany, originated in Poland, and these hogs are described by A. D. Thair in his Principles of Agriculture, published in 1804, as follows:

"Polish, or more properly speaking, Podolian pigs, were very large, but of a yellowish color, and having a broad brown stripe along the spine. Moldavia, Wallachian and Bothenian. These two races furnish very large pigs for fattening, but they require a proportionately large quantity of food; besides, they are not productive, the sows seldom have more than four or five pigs. Bavarian pigs are usually marked with reddish brown spots. They are small boned and fatten easily."

Whether this description was of their then appearance does not appear. There is no direct evidence that either of the above breeds were brought from Germany or Poland to the United States. The principal evidence we have is purely circumstantial, and is as follows:

History informs us that the early emigrants brought with them the domestic animals of their native lands, and German and Polish emigrants were quite frequent in those days, and some hogs undoubtedly came along, but no mention of any particular breed is given, nor description given of animals.

Mr. Babbitt, of Iowa, wrote a communication in 1873 to an Iowa paper, saying, that he was in New York City in 1843 and there saw landed from a vessel a pair of lop-eared, reddish hogs, called Poland, and that they were addressed to some man in Ohio, whose name and address was not remembered.

Mr. Charles Brown, in 1873, then a resident in Illinois, said: "I lived in Butler County, Ohio, in 1834, and purchased of Wm. Bodkin three Poland sows, of Robert Irving a Poland boar. Bodkin purchased his Poland stock at a fair in Pennsylvania and brought them to Hamilton County, Ohio. They were a dirty, musty color."

Mr. D. M. Magie, now a resident of Butler County, Ohio, says: "I remember the Poland hogs, and used them in originating the Poland-China more than fifty years ago."

Mr. A. C. Moore, now of Illinois, says: "I knew them in Butler and Warren counties, away back in the '40's."

A correspondent of the *Kansas Farmer* says: "I formerly resided in Union County, Indiana, and in the year 1832 a Quaker brought to that county a black hog, known as Poland, and claimed it was imported."

L. Bollman, Esq., was appointed reporter of the Indiana State Board of Agriculture in 1855, and made a report for that year, which is published in the volume of 1854-55, and in speaking of the breeds of swine exhibited at the State Fair, says: "There were Suffolk, Leicester, Poland, and with crosses, the Byfield, Grazier, Russian, Bedford and Chester White. * * I first saw the Poland stock at the Bartholomew county fair two years ago. The Poland is a large hog; a prolific breeder, and crosses well with the most of our best breeds. The pure Poland received some of the premiums. The following crosses, containing Poland blood, received premiums at the fair: Poland and Russian; Poland, Russian and Chester White; Poland, Berkshire and Grazier; Poland and Grazier."

At the same fair, through its Chairman, Anderson Johnson, the committee on swine, made a somewhat lengthy report, and among other things, said: "It will be seen that nearly all those that have received premiums have the Poland blood. The sow receiving the first premium is full blooded and the one receiving the second nearly so. The Poland and Grazier is an excellent cross, as also the Poland, Russian and Chester White. * * Indeed in every case where the Poland blood was the base of the cross, the hog was good." And in speaking of the Leicester, says: "It will doubtless result in much good in furnishing a breed by which our Poland and other breeds may be advantageously crossed."

In addition to this, up to 1870 the Poland hog was by common consent, and without a murmur of contradiction from any source, spoken of as an early element and factor of the Poland-China breed of swine, by all breeders of that breed in Ohio and elsewhere.

That a breed of hogs of that name once existed in Ohio and Indiana, can not be successfully controverted, but whether justly or correctly so-called, can not now be determined. Its exact origin can not now be given, and the same may be as truthfully said of the Grass breed, Improved China, Big China, Russian, Russia-Swiss, Chester White, Duroc, Jersey Red and others.

That the American Poland does not exactly conform in description to the Polish hog, mentioned by Thair, is not unusual; climate and the infusion of a little of the blood of the Bavarian hog, mentioned by the same writer, is sufficient to account for all such changes. It is not, however, important to show that it came from Poland. It is enough to know that such a breed was in existence in the West, and that, too, for a long period of years.

TUSCARORA.

This breed existed at one period in New York, and probably originated

there, although there is some evidence that it existed in England under the name of Tonkay. The earliest notice we find of them is in 1838, and it is described by a correspondent of the Albany *Cultivator* as "a cross of the Chinese and a superior breed from Canada, with a slight touch of Berkshire. They have the firmness of bone, aptitude to fatten, and delicacy and sweetness of meat of the China, with a trifle more of size, and in ham equal to the Berkshire. They are beautifully spotted, of clear black and white, the colors being about equal. They are full in head, small ears, long, broad and deep bodies, and a square, sloping stern."

In 1839, A. B. Allen advertised Tuscaoras, saying: "They are a cross of China and Berkshire, called in America Tuscarora, and in England Tonkay breed."

This breed seems to have had some little run for a few years in New York, Ohio and Kentucky. Its resemblance to the early Poland-China is very marked.

IRISH GRAZIER.

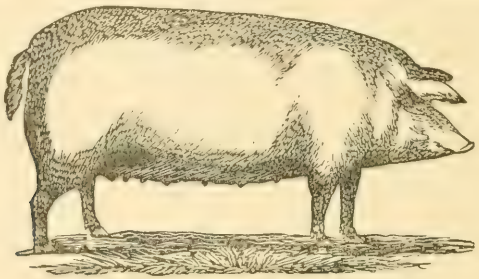
The first hogs by the above name were brought to Morgan County, Illinois, in 1834 or 1835, by Wm. Greer. The importation consisted of a pair of pigs. The boar was called Paddy from Cork, and the sow Lady Belfast. Paddy was bred by Greer in Ireland. Paddy's sire was called Old White, and was an English boar. Paddy's dam was Lady Longside, an Irish Grazier sow, whose dam was owned by Greer in Ireland. Lady Belfast was a full sister of Paddy. This is the origin of the Irish Grazier in the United States.

It is a little singular that no account of any such breed as Irish Grazier can be found in the Old Country. We are inclined to think it was a name invented by Mr. Greer. And it seems further, that if it were true that such a breed as Grazier existed in Ireland, the stock brought here were only half-bloods, as their sire, Old White, was an English hog. Paddy and Lady Belfast were coupled together and produced a litter February 28, 1836. Two of these pigs were sold by Mr. Greer to Mr. Jas. E. Letton, April 15th, 1836, and by him taken to Kentucky, arriving at his home May 9th, 1836. The boar pig weighing on arrival 48 pounds; May 17th boar weighed 63 pounds, and sow pig 59 pounds; June 17th boar weighed 109½ pounds; July 16 boar weighed 173 pounds; August 14 boar weighed 230 pounds; September 28 290 pounds, and sow 254 pounds. These pigs were named Daniel O'Connell and Lily of Geneva. Their pictures are given in the introductory chapter of this book. Daniel O'Connell is described by Mr. Letton, in the *Franklin Farmer* of 1838, as follows: "5 ft. 8 in. long; 2 ft. 9 in. high; girth, 5 ft. 4 in.; breadth of shoulders, 19 in.; across the kidneys, 17 inches; and supposed weight, 700 pounds. Lily of Geneva is described as: 2 ft. 8 in. high; 5 ft. 5 in. long; girth, 5 ft. 1 in. Both were pure white in color. Produce: 1st litter, March 16, 1837, 12 pigs;

2d litter, Nov. 16, 1837, 10 pigs; 3d litter, May 5, 1838, 13 pigs, and would be close to farrow again in November, 1838. Both Daniel and Lily were noted prize-winners, and were afterwards sold to Mr. W. P. Curd for $150 each. The particular excellencies of the Irish hogs are, they keep fat on less grain and grass than the common pigs of the country, mature at an earlier date (say in twelve months), make more meat at nine to twelve months old than any other variety, very docile, possessed of more bone and muscular power at the above age than is usual, prolific, healthful, and good travelers. Defects: Hams not so plump and good for cutting deep lean meat as the Berkshire, but their shoulders and chest are rather better, being second to none that I have any knowledge of."

The above is taken from a letter written by Jas. E. Letton to the *Franklin Farmer*, Vol. II, page 107.

A writer in 1842 says: "Several importations have been made of the Irish Grazier, some to Illinois, some to Kentucky, and others to



IRISH GRAZIER SOW, LILY OF THE FOREST.

Ohio, all somewhat differing in appearance, and all white. Some of them we much admire; others are too large, evidently requiring years to mature, and from their appearance we should judge them great consumers; the others seem more thrifty. The Irish Grazier sow, Lily of the Forest, is a descendant of Greer's importation, full grown, and will weigh some 350 to 400 pounds."

The Irish Graziers were crossed upon common stock, the Berkshire and other breeds then in existence, and it is claimed the various crosses were all successful—that the Irish Grazier improved all it touched. Later it is claimed Mr. W. E. Neff made some importations, one we give an illustration of on the opposite page; it is the Irish Grazier boar, Poppet. "He will weigh at maturity 450 to 500 pounds, and is a very finely formed animal. Some of that importation and their descendants carry the ear pricked; they have fine length, a splendid barrel, good legs, and very fine hams; the hair is scant, though fine, and the skin unpleasantly scurfy, though handling well."

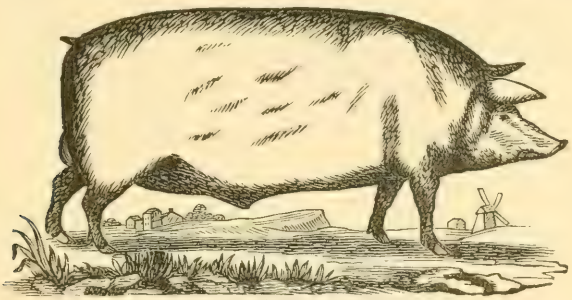
The Irish Graziers were quite popular in the West, especially in Ohio,

Indiana, Illinois and Kentucky, and were among the first to check the boom of the Berkshire, although ably seconded by the Bedfords and others.

RUSSIA.

In 1838, and for a few years prior thereto, and for many years after, there was a large white hog in Kentucky, Indiana, Ohio and Illinois, called Russia. Mr. J. E. Letton describes them in *Franklin Farmer*, Vol. II, page 404, as follows: "Color white, hair long and coarse, head long and coarse, ears not so broad as the common variety, yet longer and narrower and comes regularly to a point, projecting forward, and have not as much command over them as other hogs; they have fine length and heighth, bone large and fine, stand up well on pastern joints, they are good *trackers*, and quite industrious; they are fine through the shoulders; indifferently ribbed, flat side, narrow on loin, hams fair; want more time to mature than some others."

Mr. T. J. Conover said in 1870: "The Russian hog was sandy and



POPPET. (*See opposite page.*)

black, with white." Other writers describe it "as a small-sized, fine boned hog, easily fattened." All, however, save Mr. Conover, say it was white.

This breed seems to have suddenly dropped down in the West, but how and where it first appeared is a mystery not now solvable, and so far as we have observed, no one has ever attempted to solve it.

SIAMESE.

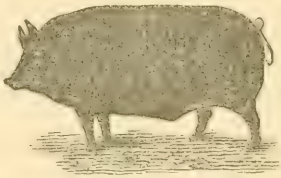
But few of this breed have been imported into the United States. Some few were brought to New York about 1840, or possibly earlier. They were used in crossing upon several breeds, but did not seem to meet the wants of the people, and soon passed out of sight.

Mr. A. B. Allen presented one to John Mahard, Jr., of Cincinnati, Ohio. It was a boar, aged one year, weight 60 pounds. An illustration of the animal will be found on the following page. This boar was said to be "of the most perfect form, soft black hair, with a coppery tinge to it; all the feet white, and a blaze in his face." With a cross of

such a *pocket edition* of a hog, is it any wonder that the Berkshire in those early days showed up so irregular in size, running from very small to quite large?

NEAPOLITAN.

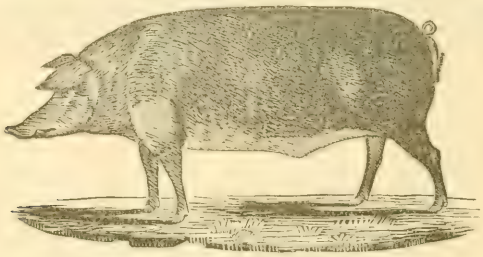
The Neapolitan was at one time very fashionable in England. It was introduced there as early as 1820, and afterwards, about 1835 or 1839, Lord Western made further importations into Essex County. Some of the blood of each importation to England reached America, but was little used, and had scarcely any influence upon swine in this country,



SIAMESE BOAR, ONE YEAR OLD; WEIGHT, 60 POUNDS.
(*See page 247.*)

except as it was mixed with Berkshire and Essex. Below we present an illustration of the Neapolitan, which passed as far West as Kentucky. There were a few importations, one or two to the East, and one to Kentucky, in 1840 or 1841. The illustration is said to have been taken when the animal was in poor health and condition, and failed to do it justice.

The breed was considerably used as a cross upon other breeds in the East and in Kentucky, but did not prove a success. If surmises were



NEAPOLITAN, OWNED BY DR. MARTIN IN '42.

in order, we would suggest that in all probability the hog known in the early history of America as Spanish Black, and the Neapolitan, are one and the same breed, as they both came from the Mediterranean countries, Naples and Spain.

SPOTTED HAMPSHIRES.

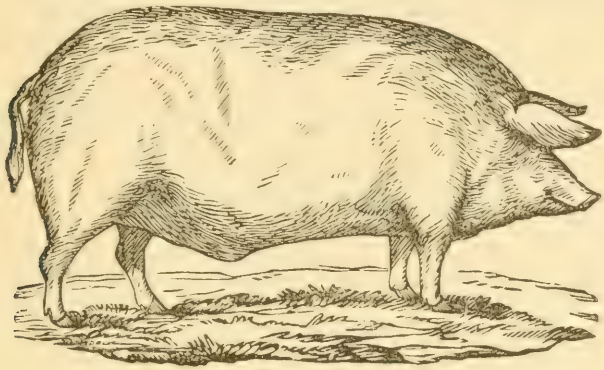
This breed is spoken of favorably in the East, in a report made and published in the *Gennessee Farmer* in 1838.

WARREN COUNTY HOG.

It is said to have been the result of a cross of Russia, Byfield and

China. Below will be found an illustration of one bred by Mr. A. Sanborn, of Hamilton County, Ohio. Its weight, when two years old, was 1,027 pounds.

This Warren County breed is described as a large, coarse breed, white in color, fairly good feeders, and was probably the first partially successful combination of breeds in that locality. As its history is a part



SANBORN'S WARREN COUNTY HOG.

and parcel of the Poland-China, we will have more to say of it in that connection.

CHINA AND LANCASHIRE.

This combination was produced by Dr. Martin, of Kentucky. Below we give an illustration of a pig of this cross. The sow, Petonia, was sired by a China boar, and out of a Lancashire sow, and is said to re-

CHINA AND LANCASHIRE SOW, PETONIA.

semble the China, except she had more length and better action. This cross was used some in Kentucky.

LANCASHIRE.

We find an account of one importation of this breed into Massachusetts, and one into Kentucky. We have been unable to find any such breed described in England, and but little account of them here. We are inclined to think that it is a mistake, and that Leicestershire is the name intended to be used. This, however, is only a surmise, and must be received with caution.

HOSPITAL BREEDS.

This breed originated at the Insane Hospital in Massachusetts, by a cross of Bedford and McKay. It was white in color, and of medium to large size, and was much esteemed for a number of years, often receiving premiums at fairs in that State. Later, about 1868 to 1870 a breed of same name originated at the Illinois Hospital at Jacksonville, and it flourished for a few years in Central Illinois, but is now extinct. The Illinois breed is said to be a cross of Chester White and Suffolk.

MEDLEYS.

This breed originated early in the '40's, and is said to be a cross of Neapolitan, China and some others. They obtained some notoriety in New York, and are said to have been well adapted for early killing and produced an excellent quality of flesh.

BLACK SUSSEX.

This breed was introduced into Ohio from Canada as early as 1840. It is described as a small boned, long rumped, closely coupled, and arched backed hog, weighing 250 to 300 pounds at one year old. It was used pure and as a cross, especially with the Berkshire, in 1846-7. A few of the Sussex found their way into Massachusetts, and later another importation was made from England. It is claimed now by some that most of the later importations of what are termed Essex are Sussex.

STEUBEN COUNTY.

O. F. Marshall, of Wheeler, Steuben County, New York, writes the Albany *Cultivator* (Vol. 7, page 249) as follows:

"We have a peculiar kind of hogs in this section, which have been here over fifty years. They became nearly extinct during the Berkshire craze, but we have, with a great deal of exertion, restored them about as pure as formerly They are similar in style to the Berkshire, but their color is red or sandy, and have very fine hair. When pure they loose their tails at three to four weeks of age. They were introduced here by the late Judge Hammond."

Query: Is not this the Duroc?

YORKSHIRE.

This is one of, if not the oldest, of the English breeds. It was imported into the United States before 1840, and in 1841 a pair of large Yorkshires were imported by A. B. Allen, and sent to a man in the Miami Valley of Ohio. Several importations were made of the large and middle Yorkshires, and among others several into Jefferson County, New York, and they were the improving basis of the Jefferson County breed. The small Yorkshires now existing are of later importations and came from England, where they are highly regarded. They are distributed over the Eastern States, and have, in some localities West, succeeded in gaining a small footing. They are also reared in Canada.

All of the Yorkshires are of white color, small heads, up-eared, and some of them showing bristles. As a rule they are deficient in hams,

and have rather poor feet, have round rather than deep bodies; the small varieties have very short, sharply curved snouts, small eyes, and overhung with fat. Like all white hogs, they are subject to skin diseases, but are otherwise hardy and are quite prolific. They have many admirers, but can hardly be said to be popular.

BIG CHINA.

Mr. Cephas Holloway claimed that the Shakers introduced this breed into Warren County, Ohio, as early as 1816; that they were brought from Philadelphia by John Wallace, a trustee of Shaker Village. It is claimed that they were imported or from imported stocks but this part of the story is very doubtful.

From 1830 to 1845 we find an occasional mention of a breed called Big China in Pennsylvansa, New York, Ohio and Kentucky. Some were white, others spotted, white and yellowish sandy. They are as a rule mentioned as a constituent of a cross bred animal, and always favorably. They were a medium sized hog, of fine form, great feeding qualities, small head and ears, short, small bones, and quite symmetrical. Some of them are claimed to be imported, but when, how, or by whom, we find no account. They were evidently cross-bred animals, and used chiefly as one of a combination in the formation of several American breeds.

BELMONT.

We find in 1838-9 pigs of Belmont breed advertised in Kentucky by Wm. B. Macklar, of Maysville, that State. What they were we know not, as we find no description of them nor further mention.

WESTCHESTER.

This breed is said to have been a large white hog, originating in New York, and is said to have borne a strong resemblance to the Irish Grazier. They are mentioned in a communication by Solon Robison to the *Western Farmer and Gardener*, who says they derive their name from the county of their origin.

LIVERPOOL WHITES.

There is mention of such a breed in Iowa in 1855, and they were said to have been imported from Liverpool, England, and were of large size, some of them weighing from 1 000 to 1,200 pounds, and although white in color, they resembled the Essex in form. This is the only mention we find of such a breed.

PRINCE ALBERT STOCK.

This breed seems to have been introduced into the United States about 1850, and is described as much like the Suffolk, except it had reddish hair. They were cultivated to some extent in New York, Ohio, Illinois, and we find in the Albany *Cultivator* that Mr. Jewett sent a pair to a Mr. Moon, of Warren County, Ohio.

The writer remembers that at one time the Suffolks, or a white hog of similar make and size, was called Prince Alberts.

In the early history of Iowa we find a notice of East India breed, and they are called a very unique variety of Chinese, imported by Capt. Hutchinson, direct from Shanghai.

In 1847, W. E. Stickney, of Boston, Mass., imported from England three Improved Middlesex and one Essex White. Mr. S. says: "I prefer Middlesex to Essex; they are larger than Suffolks, and equally as fine."

The Middlesex were used in New York for a few years, but did not get a very strong hold and soon faded out.

[Before entering upon a history of other breeds in the United States, we will describe some breeds in Mexico and South America.]

SPANISH BLACK.

This breed is the principal one of Mexico, being a small black hog, easily fattened, and thin haired. They are the principal hogs of Mexico and the Northern States of South America, although there are to be found many of a sandy variety. The original stock of both the above described breeds are from Spain, and, although there has been at various times some fitful attempts to improve them by a cross of Chinese, but little attention has been paid to them.

The existing breeds, said to have originated in the United States, are the following: Chester White, Jefferson County, Jersey Red, Poland-China, and Victoria. It is proper to say that the friends of each have written histories, but we do not feel bound by them, and will give the history of each breed from such information as we have been able to glean from a somewhat extensive and laborious research. We will first give our attention to the

CHESTER WHITES.

It is claimed that as early as 1820 Capt. Jas. Jeffries imported into Pennsylvania two Bedford pigs, and shortly thereafter Jos. Kersey imported one into the same State. These importations are not mentioned in the *American Farmer*, nor the *Ploughboy*, published at that time, and it seems to have been a tradition which came into print at a much later day. Like many other latter day assertions, it is not possible to prove it to be untrue. We, therefore, pass it to our readers for what it is worth. We are quite skeptical for the reason that we do not find any account of Bedford hogs in England. If such importations were made they were probably either Woburns or Suffolks, as both breeds existed in Bedfordshire.

In 1833 a Mr. Barnitz writes to the *American Farmer* that the Chester County hogs were made up of crosses of the English White, Suffolk and common hog. This is the earliest recorded statement that we have been able to find. Mr. B. was then, and had been for years, a resident of that portion of Pennsylvania, and had originated a breed called the

Barnitz breed, made by crossing the Parkinson upon the Chester County, as he described them. What the common hog was we can only conjecture. The Suffolk of those days was a large white hog, and the China used, we think, was the white. This combination fixed the color, and it appears from time to time, the Chester County breeders tried all the new breeds that came in reach, but still held the color white. We think it is among the oldest of the American breeds, and has been largely distributed. It may fairly be said to be a good breed.

CHESHIRE OR JEFFERSON COUNTY.

This breed originated in Jefferson County, New York, about 1855, from a cross of the middle or large Yorkshire upon the common hog, and probably with the addition of a slight dash of the Suffolk. The above named county has long been noted for its extensive dairy products, but it was not until 1855 that it came to the front as a swine-producing county. It appears by a prize article, written by Mr. W. C. Watson, and published in the New York Agricultural Reports of that year, that Messrs. Hungerford & Brodie, of Jefferson County, New York, imported from England a Yorkshire boar, which is described as follows: "The Yorkshire is a large white hog, which attains a very great weight, is finely formed and has very small bones for such a heavy frame. He is apparently a fine Suffolk much enlarged. A cross upon our native breeds produces a very desirable animal. When large weights are sought for, that is from 500 to 800 pounds, it is difficult to find a breed that will give better returns. They fatten readily, are very docile, and are said to be obtaining very much favor where they have been introduced."

What the common hog of Jefferson County was, we can only conjecture.

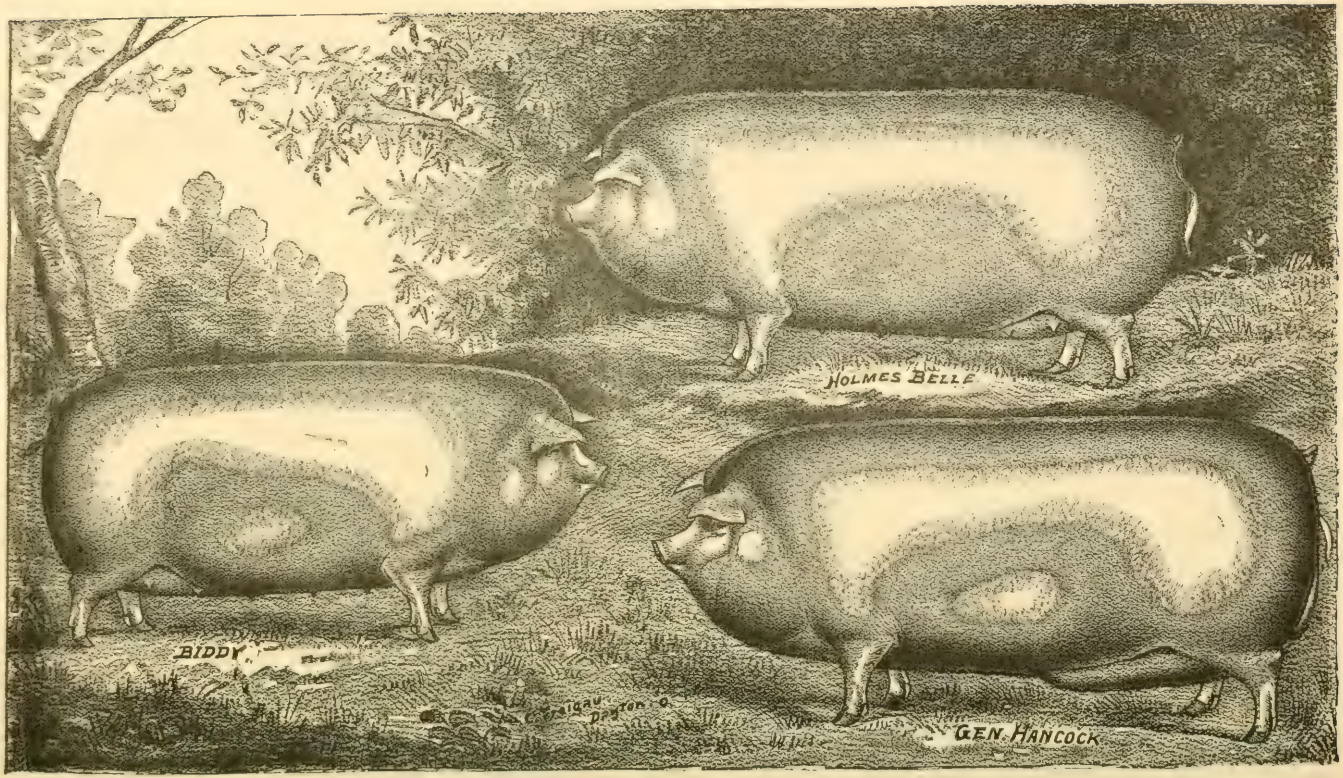
We further find by examining the premium awards of the New York State Fair in 1855 that for large breeds, Hungerford, Brodie and Converse, of Ellisburg, Jefferson County, were awarded first premium for best boar, 2 years old and upwards, "Yorkshire," $10. In 1856, at same State Fair, Hungerford & Brodie were awarded the following premiums on *large breeds*: 1st on boar, 2 years and upwards; 1st on boar, 6 months and under 1 year; 1st on sow, 1 year old; 1st on sow, 6 months and under 1 year; and Freeman Hungerford, Adams, Jefferson County, 2d on sow, 1 year old. Under *small breeds*, E. G. Cook and Greer & Maxon, same county, took nearly all premiums on Suffolks. In 1857 Jefferson County had no representative in the premium classes in the swine department. In 1858, in large breeds, S. D. Hungerford, of Jefferson County, received 1st on boar, 1 year old; best boar, 6 mos., Jas. Brodie, same county; best boar, 1 year old, S. D. Hungerford; best breeding sow, 1 year old, Jas. Brodie; 2d on breeding sow, 1 year old, S. D. Hungerford; and S. D. Hungerford 1st and 2d on best sow and pigs, 6 months old; E. G. Cook 2d on boar, 4 years old, of small breeds.

In 1860 Jefferson Co. does not appear in large breed list, but Amos Wood gets several premiums in small breed class. In 1861 Jefferson Co. is represented and takes nearly all the premiums for large breeds, as follows: Boar, 2 years old and over, 1st, A. C. Clark; boar, 2 years old and over, 2d, Hungerford & Huestes; boar, 1 year old, 1st, T. T. Cavanaugh; boar, 1 year old, 2d, Jas. F. Conover; boar, 5 months and under 1 year, 1st and 2d, A. C. Clark; sow, 1 year, 1st and 2d, C. C. Chase; sow, 6 months, A. C. Clark; lot of pigs, not less than five, 1st, W. W. Smiley; 2d, Ives & Clark; and others of Jefferson County took several premiums in classes of small breed. In 1862 Cavanaugh, Converse, and A. C. Clark, of Jefferson County, took all but two of premiums offered for large breeds, and A. C. Clark took one first in small breeds. In 1863 Huffslater, Clark and Cavanaugh, of Jefferson County, took all the premiums save those offered for large breeds. In 1864 Huffslater, Clark, Ives and Cavanaugh, of Jefferson County, took all the premiums in large breeds, except second on sow pig, over 5 and under 10 months. In 1865 Clark, Huffslater, Brodie and Jacobs, of Jefferson County, take nearly all the premiums for large breeds; and Amos F. Wood and C. B. Eastman got half of the small breed prizes.

We have not pursued investigation further, for the reason that it is not necessary for the purpose of this history. It will be noticed that in 1855 the only premium was on the imported Yorkshire boar. Next year the yearling and under grades began to come in, and year after year the same breeders with additional ones regularly appear, and a Mr. A. C. Clark appears first as an exhibitor of Suffolks, and shortly after as an exhibitor of the large and small breeds. It is this same Clark who afterwards made this breed a wider reputation by an exhibition at St. Louis in 1870, when he took the Packer's Prize. (We believe the firm who owned the herd was Clark & Green.) The writer was there, and the general impression was that the large prize was awarded to the New York herd more as an encouragement to the Eastern breeders than because the animals deserved the award, but the hogs made a very creditable show. The exhibitors were, however, satisfied and never ventured upon another exhibition in the West, nor did the breed gain much favor beyond the limits of the State of its origin. There, were, however, a few herds started, one each in Iowa and Illinois, and now but few herds remain beyond the limits of New York. They are popular in New York, but not in the West.

JERSEY RED.

The writer at one time thought this breed originated from and was an outcropping of the old Red Berkshire breed, and later, from the circumstances that of the many early settlers coming from Germany, that the origin of the breed was the old Polish or Podolian hog, described by Thair, but recent investigations have convinced us that its origin was the large red or sandy African or Guinea hog, possibly modified


HOLMES BELLE
BIDDY
GEN. HANCOCK

somewhat by the Bedford or other English breed, or possibly only by selection and change of climate. We are fully satisfied that the sandy haired hogs of Europe and America are the offspring of the red hog of Asia and Africa. [See account of African or Guinea.]

The African or Guinea hog was in New Jersey prior to 1820, and was then so called. The form, color and shape of the Jersey Reds correspond more nearly with the Guinea hog than any other, and it is certainly derived from it. Of course climatic changes, and possibly a slight admixture of other blood, may have produced some variation, but we think any person who investigates the matter, as we have recently done, can arrive at but one conclusion, and that is, that the Jersey Red is the legitimate offspring and lineal descendant of the sandy Guinea hog.

POLAND-CHINA.

Thi breed has in times past been known by various names, such as Warren County, Dick Creek, Gregory Creek, Magie, Butler County, Miami hog, and possibly other names, but the name, Poland-China, was finally adopted by the National Swine Breeders' Convention, and has since been generally acquiesced in.

The early history of the formative period of this breed, like all others, is involved in much obscurity and great uncertainty. In fact so little is definitely known, that the safer plan would be for persons, when asked as to the original elements, to answer, "*I don't know.*" This would in all cases be the exact truth, and we are free to confess, that the more we investigate, the less certain we are as to the original elements and the time and manner of the combinations. The same may be said of all the principal breeds of swine. Histories of swine are all more or less imperfect traditions and give only partial views. At this late day the history of any established breed of swine is valuable only as it affords information as to the means, methods and instrumentalities used and the relative effect of each factor or elements. Such information, if obtainable, would be valuable in assisting to maintain the breed, or to aid the breeder in forming new breeds.

We can only promise the reader a general view, and an imperfect one at that. In doing so, we shall try to divest ourselves of all prejudice of former opinions or positions. There is one important fact, however, that should not be overlooked by the student of history, and that is, that for more than twenty years prior to the agitation which commenced in 1872 (if we remember correctly), this breed was advertised as a composition of Poland, Big China, Byfield and Irish Grazier, and this was generally accepted as an undisputed fact by the breeders in the Miami Valley. As late as 1870 all the breeders in Butler and Warren Counties, save one, put on their cards the above combination. The exception was a Mr. Ayers McCreary, who lived near Monroe. He claimed to the writer that his hogs were the only pure Poland and China. He then

had a large, nearly white hog, with some sandy spots on the body. McCreary said his hogs were a combination of the two breeds, Poland and Big China. With this exception we found no breeder who was not claiming the "Big 4" as the combination. A. C. Moore, then living in Illinois, was making the same claim, and he was advertising and breeding them extensively. Mr. Magie was the only Ohio man prior to 1865 who did much advertising or shipping, and it is but simple justice to say that the early popularity and general dissimination of this breed was the result of the active work and energy of Mr. Magie. Breeders were attracted to Ohio by his advertising, and when there, they not unfrequently looked around a little, and found Magie was buying many of the pigs he shipped from persons in Butler County, who had been breeding nearly or quite as long and successfully as he. To prevent this loss of trade by persons coming in, Mr. Magie represented that he was the originator of the breed and the others only imitators or followers. This was a little more than some of the enterprising breeders in the neighborhood could or would stand. Moore was claiming also to be the original Jacob Townsend; yet he was often getting his breeding boars, and that, too, the best he ever had, of Young, Duffield and other Butler and Warren County breeders. These extravagant, and to a large extent, unwarranted claims, of Magie and Moore, put the Miami Valley breeders upon their metal, and war was declared. The claims of those two principal advertisers were disputed, and finally it resulted in an investigation by Mr. Millikin into the early history of the breed, to get facts to break down the claims of Magie and Moore as originators. Mr. Millikin found an old agricultural almanac and a copy or two of the *Western Farmer and Gardener*, and finding no mention of Poland hogs therein, jumped at the conclusion that the Poland was a myth, and he gathered all possible evidence to sustain his theory It was not an investigation to get the actual facts so much as to get something to break down the two claimants of the throne. From that time to the present there has been much written pro and con, and but little that was new added.

As we have stated the origin of the controversy, we will examine the manner of the investigation. The progamme was to down the Poland element, and one means of doing so was to show that it had never been imported, nor came from anywhere, and must, therefore, be a myth. Yet, the same gentlemen, who pressed the fight so vigorously against the Poland because it was without foreign relations or connected ancestry, readily took up the Russia and adopted it, although it was in a precisely similar condiiion so far as any account of its origin could be given. It was found there, but from whence it came and when, no one has ever discovered to this day. The Russia was, however, mentioned in the almanac and the *Western Gardener*. The Poland was not, and was, therefore, excluded, because not in either of the two publications above mentioned; yet the Big China was accepted as an element without

question, upon the statement of an aged Shaker, although not mentioned in the two great printed sources of information. These facts are merely mentioned to show how consistent are the several positions. When the traditions run with the desires of the writers, it was easy to believe, although not in the almanac, etc; but when the tradition was counter to their wishes, the line was drawn, because not in the precious books.

Another curious feature appears. Mr. Holloway was called upon, and gave his recollection of the Big China and Berkshires. Why was he not asked whether he had ever heard or known of the Poland hog? Or, was he asked and the answer not satisfactory? It can hardly be possible he was not inquired of on that subject, by the learned gentlemen, who were, or should have been, seeking for the truth. Mr. Holloway was, as they say, an old man and of the highest respectability, and an old resident of the Valley. *Why was he not asked about the Poland* when he was on the witness stand? He certainly had some recollection on the subject, for or against the Poland element. He lived near Magie and Moore: his opportunities for knowledge were first-class; and why his information on the existence or non-existence of the Poland hog was not obtained, is, to our minds, wondrous strange, unless it was not in accord with the objects of the committee's investigation. A number of witnesses are examined as to the Berkshire. Why were they not each and all asked as to the alleged myth?

The *Western Farmer and Gardener* and *Afleck's Almanac* were published in Cincinnati, Ohio, and by men who were breeding Berkshires. These publishers were among the Western boomers of the last mentioned breed. Their publications lived only during the lifetime of the boom, and their light went out as their favorite sank beneath the waves of popular condemnation. Their testimony as to the use and efficacy of the Berkshire blood must be received as that of highly interested witnesses, and the same may be said of Mahard. We have carefully examined the said almanac and the *Western Farmer and Gardener* and know whereof we speak.

NOW AS TO THE HISTORY.

First, let us take a look at the territory. Butler, Warren and Hamilton Counties, Ohio, are situate in the Southwestern part of the State, Butler extending to the Indiana line, and Warren east of and adjoining Butler, while Hamilton is south of Butler, and the west part of Warren. Union County, Indiana, corners with Butler County, Ohio, and Wayne County, Indiana, lies immediately north of Union. The Quakers settled in Union and Wayne Counties, Indiana, and there was a colony of Shakers in Warren County, Ohio, and a small one in Union County, Indiana, and one in Kentucky. The Bluegrass region of Kentucky lies south of the line dividing Indiana and Ohio. Frankfort, the capital, and the place of publication of the *Franklin Farmer*, is almost

exactly south of the dividing line between Indiana and Ohio, and not very distant.

The above mentioned portions of the then States were, from 1820 to 1840, producing more corn in proportion than any other part of the country. The common market for hogs for all those parts of the country above mentioned, was Cincinnati, which was then a great packing point.

The Shaker and Quaker colonies came from New York and Pennsylvania. The settlers of Kentucky were principally from Maryland and Viginia. The first settlers of Hamilton County, Ohio, were from New Jersey. Kentucky was admitted as a State in 1792, Ohio in 1803, Indiana in 1816. About these years we find the African or Guinea hog coming to America, and especially in New Jersey.

The early settlers of the above mentioned portions of Indiana, Ohio and Kentucky, were nearly all from New Jersey, Maryland and Virginia, and it is but fair to assume that they brought along with them the domestic animals of their homes, and we find back in those old States, at and about 1800, the Parkinson (Bedford), Grass and China, the prevailing improved breeds.

We have found no mention of any of the Grass breed "out West," but we do find the Bedford (or Woburn, as the breed was called in Kentucky) right in the Bluegrass region. Dr. Martin, of Kentucky, says his father brought from England a boar as early as 1812, and in 1815 hogs of Calcutta breed were brought to Clarke County, Kentucky.

Mr. Cephas Holloway says their colony of Shakers in 1816 introduced in Warren County, Ohio, from Philadelphia, a boar and three sows, called Big China. One sow had some sandy spots on her in which appeared some small black spots; the boar and other sows were white.

Here we find the first account of improved hogs brought into the region about Cincinnati; what they were, we can only guess. Bedfords were certainly brought and used; they were then popular in the East, and were very popular in England under the name of Woburns, and in 1807 were called a new breed of great excellence.

Mr. Holloway's description of the Big China will answer very well for the Grass breed in Maryland, Virginia and Pennsylvania, or a cross of China on the Bedford. The Grass breed was white and spotted, with black and sandy.

Mr. Barnitz says in the *American Farmer*, Vol. XV: "The Parkinson hogs were shaped like China, but had more growth, and were sandy color, with black spots."

In Pennsylvania, Maryland and Virginia we found accounts of China, white, blue, grey and black, before 1825, and Suffolks, Hampshire, (black), Spanish Black, and other breeds more or less distributed where those early settlers came from, and it is more than likely they took some of the grades of these breeds or combinations with them.

Large hogs were common in the East, and in 1827 we learn that a Mr. G. Long, of Butler County, Ohio, raised a hog that weighed 1,260 pounds. In 1830, Mr. Poston, of Clarke County, Kentucky, purchased in Pennsylvania and brought to Kentucky some Bedford hogs. About the same time, possibly a year or two later, Mr. McMahon, of Union County, Indiana, imported from England some large, white hogs, one of which weighed 1,160 pounds. In 1832, John Saterwait, of Warren County, Ohio, raised a hog which weighed 1,400 pounds. We find the Poland-China territory filling up with several breeds and some large hogs. An "Ohio Man" writing in 1823 to the *American Farmer*, says: "Hogs here have been improved by cross of China and Calcutta breeds. We now have Byfield, Swiss, and Russian. Of these three the Russian (not Russia) is least profitable, being small and too fat to breed well: when crossed with other stock make good hogs, but not equal to the Swiss or Byfield. Mr. Roberts, of Indiana, (Union County) prefers Swiss, while Mr. B. Smith, of Woodford County, Kentucky, prefers a cross of Swiss and Byfield." This is the first mention we find of the breeds last above mentioned, but they had evidently been there some time, as they are not spoken of as new. The Swiss is described as of a dark brown color, of medium size and large bone. The Byfield is described as a beautiful white hog, ears small and pointing to the nose, broad back, deep chest, large jowl, short nose, dished face, and thin hair, and brought from Massachusetts to Ohio. In 1833 and prior thereto, we find in the territory immediately tributary to Cincinnati, the Bedford, Swiss, Russian, Byfield, and a large white English breed. We do not find any breed called Swiss, elsewhere. [Was this brown, black Swiss another name for Poland.] How it got into the Poland-China territory, or from whence, we do not pretend to answer. We now believe that the original improving blood was the Bedford or Woburn, for two good reasons: First, it was in that part of the country; second, its form and characteristics are even yet often noticed, and but a very few years ago was very frequently seen in the Poland-China, as will be noticed by reading the following description of Dr. Martin's Woburns: "The average one has fine head, neck, and ear, the latter somewhat rounded and bearing forward and outward; shoulder generally good; generally a sinking behind shoulder, back otherwise good and slightly arched; very broad ribs, supporting the belly more than is common in any other breed; the loin splendid, but high above the shoulder to a very great degree; the rump drooping rather suddenly; the ham large, but not as thick as it ought to be; twist fair; flank, in some good, others sadly tucked; the legs generally so good as to resemble the deer." The above is the description of the Kentucky Woburns (or Bedfords). Breeders of Poland-Chinas who for the last twenty years have been engaged in breeding, have you not been fighting most of the defects in the above description, and are they entirely suppressed even

now. The Guinea hog and its crosses, with its square form, large size, short legs, lop ear, and sandy-haired blood, put in an early appearance and formed one factor of the common hog, brought by settlers from the States of New Jersey, Maryland and Virginia, to the Poland-China territory.

The Big China, so-called, was evidently a Parkinson or grade of that breed, and it may safely be said the first marked step in the formation of the Poland-China, was the Parkinson and its grades, and grade China, as they were present every where. That there was a breed or several varieties of hogs called Russian or Russia in Ohio, Indiana and Kentucky, there can scarcely admit of a doubt, but why called Russia, we pass the conundrum to the fertile imagination of the guileless ex-schoolmaster. The Russia had no standing East, and it may or may not have had its origin from the McMahon importation of large, white hogs imported from England. Whatever its origin, it was a factor in the general improvement, and its coarse, slow, growing form was modified by the Byfield and Bedford, aided by the dark brown Swiss and the breed known as Poland. That such a breed or family of hogs as the Poland existed in Ohio, Kentucky and Indiana at an early day, we have no doubt. Whether justly or properly so-called cannot now be ascertained or settled.

Next or possibly contemporaneous, but we think, later, came the breed called Irish Grazier, and about the same time the old fashioned, spotted Berkshire, and what was then known as the Improved China, Spotted China and the crosses of Grazier and Berkshire. As late as 1841 a number of large Yorkshires were imported into the Miami Valley from England. Alloyed Woburns and Thin Rinds were all mingled and remingled, as they were all contiguous, and the enterprising breeders of Butler and Warren Counties, Ohio, and Union and Wayne Counties, Indiana, and the Bluegrass region of Kentucky, were, with generous rivalry trying to produce the best hog rather than cling to any one breed or particular line.

We do not think Mr. Magie, or Mr. Moore, or Mr. Duffield ever used the pure Berkshire to cross upon their stock, but they obtained crosses from others who had, and thus the blood of all the different breeds were being combined in various proportions and in unknown quantities, the sole guiding star being the perfect hog, and the end was more thought of than the means, so far as currents of blood were concerned. The best shaped hogs attainable were used without much scrutiny as to blood. No records were kept and no thought then entered the minds of the thrifty and intelligent breeders of that section of country that their work was destined to be a living monument of their genius and co-operative efforts.

They builded better than they knew; sows were hauled or driven many miles to a favorite or famous boar, and the service was often, in fact usually, obtained without money and without price.

No man or set of men can, in our judgment, consistently claim to have originated this splendid and profitable breed. It was an organized effort of all the principal hog growers of the portions of the three states named, and with rare skill and judgment they eradicated the bad and held fast the good and desirable forms, traits and qualities, and since its formation, breeders in all parts of the great corn belt have aided in its improvement and advancement, so that its present excellence and prominence is not confined by State lines, nor does it depend upon the soil or climate of any particular locality. It is the best of all the breeds and stands without a rival for practical utility.

GOTHLAND HOG.

This is a new breed in the United States, and the only account of it we have seen appeared in the *Breeder's Gazette*, published at Chicago, Illinois, Vol. 10, page 787. This breed is said to have originated in Gothland, Sweden, and is often called Swedish hog and sometimes Shohlar. The first importation was made in the summer of 1880 by S. V. Anderson, into Northern Illinois.

It is claimed by H. M. Jones, the correspondent of the *Gazette*, that it is a strong, healthy breed. The following is a description of the breed: Color, spotted black and white, varying from almost white to nearly black, according to fancy of breeders. As a rule they are of large size and easy fattening qualities. At ten to twelve months old will often dress 350 pounds, or they will continue growing until they are two or three years old, and have been made to weigh 700 pounds. Body rather long and very deep; short, well-set legs; broad, straight back; large, square hams and shoulders; rather small, drooping ears; short heads; short, thick neck, and heavy jaws; hair very thick and fine; excellent breeders and mothers; very docile, and have vigorous constitutions, enduring cold weather very well.

VICTORIAS.

The New York family of this breed, it is claimed, originated in that State about 1850, and that the chief credit is due to Col. F. D. Curtis, as the builder. It is claimed that the first cross was the Byfield upon the common stock, in which was a slight touch of the Grazier—whether this Grazier was the Irish or Grass breed, we are not informed. Later, Yorkshire and Suffolk blood was introduced, but in what proportion, we have no information. The product was a white hog, much like the Suffolk of modern days, with possibly a little more size. It has not been much distributed, and is little known beyond the neighborhood of its origin.

THE INDIANA VICTORIA

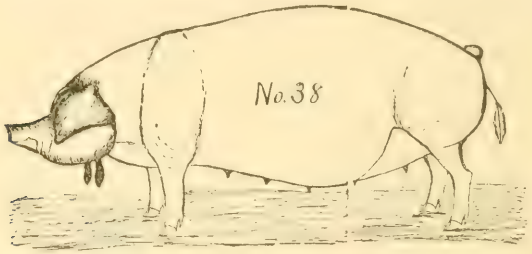
Was originated in Northern Indiana about 1870, by Sheyt & Davis, and is a medium sized, white, up-eared, good feeding, and fairly good hog. It is said to be the result of crossing the Poland-China, Berkshire, Chester White and Yorkshire breeds, but how much of each current,

was used, we have no information. It has been successful at the National Fat Stock Stock Shows at Chicago for a number of years, beginning in 1880-81. It has been received with considerable favor in the past five years in Northern Indiana and Illinois.

[It would be a favor to breeders if the originators of these two varieties would communicate to the public the particulars of the origin and development thereof; how the crosses were made, and the results for good or bad, and the relative influence of the different currents of blood.]

THE COMMON HOG.

If antiquity is a merit, then the common hog has merit in almost an unlimited degree, for it has existed since the time when the memory and traditions of man runneth not to the contrary. Prior to the seventeenth century there were few, if any, improved breeds; on the contrary, all hogs were common hogs, and notwithstanding the latter day



improvements, the common variety yet hold their own with a stubbornness worthy of a better cause. It came with the Pilgrims, and subsisted off of the country, and was in its way a valuable product, for it was able to, and did, in a large measure, care for itself, in early times. It has, however, served its day and generation, and must henceforth take a back situation, but is ready at any time to resume its form and dominion when neglect, lack of food and culture hold sway. Nothing is more certain than the proposition that, any of the improved breeds, if turned into the woods or upon the commons, and required to shift for themselves, will rapidly drift back to the form and condition of the common hog, and that, too, in a few generations. It is the ever attendant whirlpool that draws within its circle all those that have been neglected by starvation. The color of the common hog embraces white, black, sandy, brown, red, spotted, gray, blue, speckled and striped. Its home is co-extensive with civilization, and its form is as varied as its color. The general form is long in leg short in body, long neck, flat sides, small quarters, long nose, large ears, coarse hair, and a fleetness of foot

that will equal the common horse. Here is a description, copied from an early agricultural paper, and while slightly overdrawn, is good:

"I'd jest as soon undertake to fatten a salt codfish. He's one of the racers, and they're as holler as hogsheads; you can fill 'em up to their noses, ef you're a mind to spend your corn, and they will caper it all off their bones in twenty-four hours. I believe ef they were tied neck and heels an' stuff'd, they'd wiggle thin betwixt feedin' times. Why, Orvin raised nine on 'em, and every darned critter's as poor as Job's turkey to-day; they aint no good. I'd as lieves ha' had nine chestnut rails, and a little lieveser, cause they don't eat nothin'"

The cut of the Pilgrim hog in introductory chapter, page 7, shows a specimen individual. But the common hog has made some advancement, as all well know. The influence of civilization and improvement has not been all lost on this ever present domestic animal. Cut 38 illustrates some improvement. Such hogs were common in Ohio when the writer was a boy, and may occasionally be found in various parts of the country. In fact many can be found in the Miami Valley, where they should least be expected.

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